REPORT RESUMES

ED 003 451 24

EFFECTS OF TWO PROGRAMS AND TWO METHODS OF TEACHING UPON THE QUALITY OF ART PRODUCTS OF ADOLESCENTS.

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REPORT NUMBER CRP-S-055 PUB DATE 65
EDRS PRICE MF-$0.27 HC-$6.16 154P.

DESCRIPTORS- CREATIVE ART, GRAPHIC ARTS, *ART EDUCATION, *TEACHING METHODS, *ADOLESCENTS, *ART PRODUCTS, *TESTING, SELF EXPRESSION, UNIVERSITY PARK, PENNSYLVANIA

THE QUALITY OF ART PRODUCTS OF STUDENTS WERE MEASURED TO COMPARE (1) THE EFFECT OF AN ART PROGRAM PRESCRIBED TO A TEACHER VERSUS AN ART PROGRAM SELF-DEVELOPED BY A TEACHER AND (2) THE EFFECT OF TWO METHODS OF TEACHING, ONE SPONTANEOUS AND THE OTHER DIVERGENT. SPONTANEOUS ART STRATEGY WAS DEFINED AS BEGINNING WITH A BIG ORGANIC STATEMENT DEVOID OF DETAIL BUT SUGGESTIVE OF A WHOLE PICTURE. THROUGH PROGRESSIVE MEDIUM INTERACTION, CENTRALIZATION, MOVEMENT, INCORPORATION OF PROCESS-INSPIRED ACCIDENTS, AND SUGGESTION, STUDENTS USING THE SPONTANEOUS STRATEGY FOCUS ON THE WHOLE PROBLEM AS THEY FEEL IT AND TRY TO SOLVE IT THROUGH PROCEDURAL EXPERIMENTATION. DIVERGENT ART STRATEGY WAS DEFINED AS TYPICALLY BEGINNING BY DRAWING WITH FINE LINE CONTROL A SINGLE ELEMENT WHICH INCLUDES RELATIVELY PRECISE DETAIL. AS NEW ELEMENTS ARE ADDED, AN ALTERATION OF VIEWPOINT AND SHIFTING OF FOCUS IS LIKELY TO OCCUR. APPROXIMATELY 60 STUDENTS RANGING IN AGE FROM 13 TO 17 PARTICIPATED IN 4 CLASSES. ART PRODUCTS WERE JUDGED FOR ORIGINAL-AESTHETIC QUALITY, THAT IS, THE UNCOMMONNESS OF RESPONSE AND PLEASING QUALITIES. CORRELATION ANALYSIS OF PRETESTS AND POST-TESTS PRODUCED LIMITED POSITIVE FINDINGS. (JM)

U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
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EFFECTS OF TWO PROGRAMS AND TWO METHODS OF TEACHING UPON THE QUALITY OF ART PRODUCTS OR ADOLESCENTS

Cooperative Research Project No. S-055

Leon Frankston

The Pennsylvania State University
University Park, Pennsylvania

1965

The research reported herein was supported by the
Cooperative Research Program of the Office of Education
U. S. Department of Health, Education, and Welfare

ED 003451

ACKNOWLEDGMENTS

Experimentation and research--particularly in the arts--involves the fascination and sophistication of walking on soft-virgin ground in the search for human and aesthetic values. Conceived in that spirit, the research study reported here represents, for me, the culmination of an intensive experience which has seen both moments of crisis and gladness. I am grateful to the many individuals who have shared in both.

My first appreciation go to Dr. Edward L. Mattil, and Dean A. W. VanderMeer who, through a flexible administration, have provided me with time to write the proposal for this study and have also established a climate conducive to exploration of the new.

My many contacts with Dr. Kenneth R. Beittel and Dr. Robert C. Burkhart during the past years, have been a major influence in my role as researcher. They have shared with enthusiasm their many years of experience and through their Spontaneous-Divergent Theory have provided part of the springboard for this study.

To Dr. Harold E. Mitzel and Dr. Hugh M. Davison I owe special thanks for their unique contributions and suggestions with respect to the design, measurement and statistics of the study.

To meet the tasks of the details and operations of this project I had the very capable help of Mr. Larry Kantner who, as Research Assistant, met his responsibilities with zeal and determination.

I am grateful for the wonderful cooperation of the many teen-agers who formed the heart of this research and for the dedication and enthusiasm of the teachers and observers selected to teach them--this project could not have been possible without them.

Mrs. Helen Dunkel, as secretary-typist, was largely responsible for the presentation and format of the manuscript. I am indebted to her for her alertness and accuracy.

And now that the work is done--first and last--my affection and love go to E.F., B.F. and G.F. who truly make a man's home his castle.

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CHAPTER I

INTRODUCTION

The present chapter discusses (1) the background of the study, (2) the present study, and (3) the related literature.

I. BACKGROUND OF STUDY

The problems faced by art educators when dealing with the stage of adolescence together with the concerns and interests of the writer have in part been a factor in the selection and formulation of this study. Until recently, research in art education has largely neglected those wonderful, precious and turmoiled years. Today, more and more studies are concerned with it. Nevertheless, the literature in the field indicates that further research needs to be done to discover the kind of art program best suited for boys and girls at that stage of their development.

The theoretical and philosophical views which exist up to the present time, are too varied to be of value in classroom practices. Some of those views support an art program which stresses exploration and experimentation with a large variety of media and materials - what may be called a "breadth" approach to teaching. Others suggest that the maximum sensitivities of individuals can be developed by limiting the art program and concentrating the activities to a few related media - in other words a "depth" approach.

This study is based on the assumption that a depth approach to art instruction is more desirable than a breadth approach However, even within this basic educational philosophy there is a need to clarify what is meant by depth. Is it merely providing students with a common medium to explore over a period of time? Or does it entail progressive, sequential and cumulative development with respects to medium as well as ideas and visual imagery? Should not the depth or reinforced depth approach to art be based on roots and wings--on expressive, emotional and intellectual development?

Within the limitation of a depth approach the question may be asked regarding how this program ought to be developed. Would it be better to have each teacher develop and write his own art program or would it be better to have an expert write and prescribe an art program for the teacher?

Administrative effectiveness may at first suggest that a predetermined or prescribed art program or course of study ought to be developed by experts in the field which would then in turn be implemented by an art teacher. Many such programs have been written with an emphasis on a breadth approach. On the other hand, not much has been done with depth programs; and as one part of this study the writer prepared such a program which was implemented by teachers who were predicted to use different teaching methods or strategies. It was felt that the success of the art program might be related to the type of teacher who implemented it.

On the other hand it might also reasonably be argued that an art program would be more meaningful if it could be developed by the teacher who would then be better able to alter it to meet the needs and interests of the students she teaches. Such a situation would undoubtedly require time and effort spent on planning activities and lessons. Might not this time be put to better use by concentrating on understanding the creative and aesthetic growth of adolescents and helping them to meet and solve their individual problems?

It further seems that, in addition to content of the art program and the way it is developed, teacher variability would have an effect upon the individuals taught. It is hypothesized that two different methods of teaching are involved--one may be called "spontaneous" and the other "divergent." The problem is to discover the degree in which predictive measures are reliable when compared with an actual teaching situation, and their effect upon students and their work.

The predictive art studio strategy of teachers may perhaps be closely related to their method of teaching as seen in actual classroom situations. If it is assumed that art instruction offers numerous opportunities to develop the creative and aesthetic sensitivities of individuals, it may then be hypothetically and logically asked: What should be the art program and how should it be developed? What is the effect of the teaching method used and how does the method of teaching and the art program affect the quality of the art products of students?

II. THE PRESENT STUDY

This study deals primarily with the effects and interrelationships of what is taught -- content, and how it is taught -- method, as measured in the change revealed in the art products of adolescents. It has the following general objectives:

1. To compare the effect of two art programs (self-developed and prescribed) as measured by the quality of the art products of students.

2. To compare the effect of two methods of teaching (the one spontaneous and the other divergent) as measured by the quality of the art products of students.

Main Problems

1. What are the differences, from the beginning to the end of the experiment, in the Original-Aesthetic Quality of the art performances of adolescents which are attributable:
   a. to the variation due to the content of the art program.
   b. to the variation due to the method or strategy of teaching.
   c. to the possible interaction between the content of the art program and the method of teaching it.

2. What are the changes which have taken place, from the beginning to the end of the experiment, in both the Divergent and the Spontaneous Art Strategies of adolescents which are attributable:
   a. to the variation due to the content of the art program.
   b. to the variation due to the method of teaching
   c. to the possible interaction between content and method.

Subordinate Problems

There were several subordinate problems which were related to the main hypotheses of the study. They were:

1. Can judge experts reliably measure certain established criteria based on art performances of students?

2. To what degree is it possible to predict the art performances of adolescents by the use of paper and pencil tests--the FAT and the ISSD-63.

3. What are the actual observed differences in the methods used by teachers classified as Spontaneous and those classified as Divergent?

4. What are the actual observed differences between the art content of the prescribed and the self-developed courses of study.

Definitions of terms

Original-Aesthetic Quality. The Original-Aesthetic Quality of an art product is considered as an important gestalt element of art. It is defined as uncommonness of responses, production of the unusual or unconventional, cleverness and remoteness of interpretation of ideas. It is contrasted with imitation or copying the styles of others. Furthermore, that quality is indicated by pleasing relationships, beauty, balance, rhythm and unity in arrangements, originality and aesthetic quality are not to be confused with skill, neatness, or ability to draw "correctly."

Spontaneous Art Strategy. "Spontaneous Strategy, in broad terms, exhibits a beginning big organic statement devoid of detail but suggestive of a whole picture. Through progressive medium interaction, centralization, movement, incorporation of process-inspired accidents, and suggestion, students utilizing the spontaneous strategy focus on the whole problem as they feel it and try to solve it through procedural experimentation."[1]

Divergent Art Strategy. "In the Divergent Strategy, the student typically begins by drawing with considered fine line control a single element which in some portion shows the early inclusion of relatively precise detail. As new elements are added, an alteration of viewpoint and shifting of focus is likely to occur, and the work is off-center and tensional. Through line, black and white contrasts and positive-negative figure-ground reversals, the work undergoes unexpected changes, and becomes flatter and often simpler."[2]

Limitations

The plans for this experiment were limited to four groups of about fifteen students each. The students came from a community of which the University is a focal point. In the opinion of the writer they would not be considered "average" but rather "above average" since (1) they reflect various degrees of intellectual environments found in the home (2) they elected to take art outside of their regular school program by coming to the University on Saturday mornings, and (3) they already have above-average art experiences since many have been coming to these classes for a number of years.

A serious limitation to this study was the length of the experiment--only nine weeks (2 hours per week). A longer treatment would indeed have been more desirable.

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[1] Kenneth R. Beittel, "Effect of Self-Reflective Training in Art on the Capacity for Creative Action," Cooperative Research Project No. 1874, Office of Education, U. S. Department of Health, Education, and Welfare, 1964, p. 7.

[2] Ibid.

III. RELATED LITERATURE

Need for research at the adolescent level

During the past twenty years the elementary schools have seen remarkable changes in methods and content of the curriculum in terms of the total growth of the individual. On the other hand the secondary school level has, until recently, been largely neglected. Recognition must be given to the fact that the adolescent is at a stage of physical and mental development which requires more attention and intensive study than it has received in the past.

Lowenfeld stresses the need for more research on adolescent art in general:

> While our knowledge and concepts of child art have greatly expanded during the past years, the understanding of the art of the adolescent has been neglected greatly.
>
> . . . .
>
> That we are far from having arrived at a similarly definite concept of adolescent art can clearly be seen in the general confusion which is found in both the junior and senior high schools of our nation and I may add in the whole world. ...The underlying principles which determine the concept of adolescent art need to be clarified.[1]

Although art education research, based on the critical years of adolescence is generally limited, most art educators are nevertheless aware of the problems. Concern for developing clearer concepts and ideas in current directions was the basis for a group meeting at the 1955 convention of the National Art Education Association. An extensive survey made by Hastie, also concludes, that there is a need for re-thinking the school art program at the senior high school level.[2]

The present state of art programs at the secondary school level is reflected in a study by Howlett based on an analysis of 21 art curriculums. It reveals that most of them are "subject-centered in the organization of content with the emphasis on the teaching of technical knowledge and skills. The findings indicate that the translation of broad, basic objectives into the more immediate and specific instructional goals is a major problem of art education."[1]

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[1] Viktor Lowenfeld, Creative and Mental Growth, third edition, (revised), New York: The Macmillan Company, 1957, p. 278.

[2] Reid Hastie and David Templeton, Art Education in the Secondary Schools, Research Report 1-63, Department of Art Education, University of Minnesota, Minneapolis, 1963, p. 5. (Mimeographed)

Teachers as well as leaders in the field are aware of the problem. George K. Ross reported in 1953 that results of a questionnaire sent to junior high school art teachers showed a definite need for more research on this level.[2] Crespi, after reviewing the literature related to art on the junior high school level concludes that there is a need for art education not only to recognize the special and distinct character of that level, but also for intensified qualitative research on problems dealing with it.[3] Carl Reed brings renewed awareness to the fact that, while there has been a trend toward more and more junior high schools, the development of a suitable art program has not kept pace with it.[4]

The critical years of adolescence

The critical years of adolescence is a period of human development which for a long time, has been largely neglected. G. Stanley Hall (1845-1924) and Thomas Briggs were two of the earliest investigators of adolescence and its problems, and emphasized the study of psychology.

In creative expressions the adolescent is able to find the confidence and self-assurance he needs to see him through this awkward age, and which he often cannot find in other activities or in his relationships with adults. The possible loss, however, of the creative urge during these years presents a real problem of which many educators are aware. Clarence Kincaid, for example, has shown that, while among younger children creative ability and chronological age are proportional, during early adolescence (approximately 13 or 14) there is a decline in creativity.[1] Carl Reed believes that since the early adolescent becomes more critically aware of himself and compares his products critically with others he often begins to feel less adequate in his ability to express himself.[2] What can be done to promote the creative and aesthetic sensitivities of adolescents during these critical years?

---

[1] Carolyn S. Howlett, "An Analysis of Art Curriculums in Terms of the Development Needs of Youth," Research in Art Education, Ninth Yearbook, National Art Education Association, 1959.

[2] George K. Ross, "Some Research on Researches on 'Art in the Junior High School,'" Art Education Bulletin, Eastern Arts Association, Vol. 4, 1953, pp. 17-20.

[3] David E. Crespi, "A Study of the Role of Early Adolescent Reality for Art Education in the Junior High School," Doctor of Education Project, Teachers College, Columbia University, New York, 1959, p. 238.

[4] Carl Reed, Early Adolescent Art Education, Peoria, Illinois: Charles Bennett, Inc., 1957, p. 8.

As early as 1892 Earl Barnes, in a study involving several thousands of drawings of children from six to sixteen years of age, made the following observations in regard to the adolescent:

1. The courage to express their ideas through drawings increases to the age of thirteen or fourteen.

2. Children who declined in their interest to draw were over thirteen years of age.[3]

Charles D. Gaitskell reports in a study based on 600 drawings of students (grades 7-12) that the quality of their art production was inverse to age.[4] He compared students in an experimental group who had art experiences with those of a control group who did not have such experiences. He found that the experimental group was superior to the control group and attributes the slump in creative interest and quality of art products to the crisis of adolescence.

In a study conducted by the writer it was concluded that:

> Whether or not the students took an art course had no effect on the quality of their art performances. At the beginning and at the end of the semester the quality of their art was the same with respect to the judged criteria (original-aesthetic

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[1] Clarence E. Kincaid, "The Determination and Description of Various Creative Attributes of Children," Studies in Art Education, Vol. 2, No. 2, Spring, 1961, p. 51.

[2] Carl Reed, Early Adolescent Art Education, Peoria, Illinois: Charles Bennett Company, 1957, pp. 57-58.

[3] Earl Barnes, "A Study on Children's Drawing," Pedagogical Seminary, Vol. 2, 1892, p. 463.

[4] Charles D. Gaitskell and Margaret R. Gaitskell, Art Education During Adolescence, Toronto: The Ryerson Press, 1964, p. 90.

> quality and technical proficiency). The status quo was maintained not only for the students taking art, but also for the students who were not taking art."[1]

The negative findings of a number of studies seems to be an urgent appeal to art educators and researcher to take a serious look at the critical years of adolescence. In general it may be said that the Original-Aesthetic Quality of the art performances of adolescents, if it does not decrease, does little more than maintain a status-quo. It seems as if at this age level there is a lull in the growth of students as seen in their art performances. Could this be attributed to the "crisis of adolescence?" Or could it be that cognizance has to be given to the problem of discovering ways of teaching art which are more closely related to the psychological development of adolescents? It may be that young people who have reached the age of adolescence have already developed patterns of behaviors and performances which are difficult to change over a short period of time--if at all. Perhaps observable differences could be found when a longer treatment period is considered. It is almost self-evident to the keen observer that research and experimentation regarding adolescent art are very limited and that more needs to be done to help clarify the many speculations and varying opinions which exist regarding the art program that would best meet the needs and interests of that age level.

It is generally hoped that, through a better understanding of the nature of the creative process, philosophical and theoretical beliefs would lead to improved art curriculum designs for adolescents.

The creative process

In his Symposium Plato describes what he calls the "true artists" as those who bring into birth some new reality. Neither Plato nor his student Aristotle thought of the creative product in relation to the creative process. Certainly their main emphasis was on "originality as a product of reason and intellect."[2]

Whether one speaks of the use of a particular medium or the creation of a particular product, one speaks in essence of an encounter with a problem which is all-involving and which requires intensive concentration. Rollo May refers to it by saying that, "The essential point is...the degree of absorption, the degree of intensity...the specific quality of the engagement."[1] This intensity of encounter often becomes a struggle with a meaningful environment. It takes into account both that which is known and that which is to be known in a purposeful attempt to solve the problem in a new and fresh way.

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[1] Leon Frankston, "Some Explorations of the Effect of Creative Visual Art Experiences upon the Poetry Writing Quality of Eighth Grade Students," Studies in Art Education, National Art Education Association, Vol. 5, No. 1, Fall 1963, p. 57.

[2] Plato, Symposium, William L. Bryan (ed.), New York: Charles Scribner's Sons, 1897.

Creativity is thus directed toward innovation. It involves destruction, transformation, and reconstruction. It consists in part of selecting, evaluating, and criticizing that which is known. It has its basic origins in constructive interest, needs, drives, and motives which become an essential addition to the tools and skills used to shape the idea into something concrete. Opposed to this creative attempt to find new solutions, non-creative work usually follows set patterns.

"Creativity is a transformation of experiences in one order and form into experiences in another order and form."[2] In an attempt to achieve a higher order the individual, in the process of creating, may proceed through countless digressions and irrelevancies which must be understood to be an integral part of the creative process. The possible decisions may be at first conscious or unconscious, but in any case they are never clear-cut and never take a direct road toward one solution. Often the period involves a long inward struggle--an incubation period--which is followed by a "spark" or an "inspiration," which proceeds creatively to the achievement of the new order.

Catherine Patrick has investigated the creative thought process of poets and non-poets and artists and non-artists as they worked in their media.[3] She finds that, in both poetry and art, creation proceeds through four overlapping stages: (1) preparation, (2) incubation, (3) illumination, and (4) revision or verification. Four similar stages of the creative thinking process are also set forth in a theory by Graham Wallas.[4]

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[1] Rollo May, "The Nature of Creativity," Creativity and Its Cultivation, Harold H. Anderson, (ed.), New York: Harper and Brothers Publishers, 1959, p. 58.

[2] Manuel Barkan and Ross L. Mooney, (eds.), The Conference on Creativity: A Report to the Rockefeller Foundation, Columbus: Ohio State University Press, 1953, p. 134.

[3] Catherine Patrick, "Whole and Part Relationship in Creative Thought," American Journal of Psychology, Vol. 54, No. 1, January, 1941, pp. 128-131.

[4] Graham Wallas, The Art of Thought, New York: Harcourt, Brace and Company, 1926.

Content of the art program

What the art program should be and how it should be taught is an open question. A number of theories have recently been advanced however which stress the need for a definition of the structure of art education consistent with curriculum experimentation as described by Jerome Bruner.[1]

This does not mean less content, but an enlarging and more vital content. Some experiments to date have introduced special courses on creative thinking rather than developing it in specific subject matter.[2] On the other hand, there are courses of instruction which may be planned or perhaps re-planned in the field of art in such a way as to emphasize the development of creativity. It may be that the development of creativity is dependent upon the kind of art instruction, program, and method of teaching. Art may indeed, offer unusual opportunities and natural conditions for the development of aesthetic and creative sensibilities.

The writer is aware that many art programs on the secondary school level are based on the concept that an exploratory approach which encompasses a wide variety of materials is desirable.

A number of writings seem to stress both breadth and depth within the same program thus not only avoiding a definite stand but more importantly, creating ambiguity in the presentation of the philosophical aims of art for the adolescent.

Such contradictory views are sometimes even presented by one writer. But the important point that needs to be brought out is that there seems to be a lack of conviction regarding either depth or breadth approaches. For instance, a recent publication which reflects the views of a number of art educators and which is addressed to secondary school administrators, states that:

> The availability of a wide range of materials and tools in art classes encourages learners to explore many possible ways of objectifying their ideas."[3]

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[1] Jerome S. Bruner, The Process of Education, Cambridge: Harvard University Press,

[2] Sidney J. Parnes, "Can Creativity Be Increased?" Studies in Art Education, National Art Education Association, Vol. 3, No. 1, Fall 1961, pp. 39-46.

[3] Ann M. Lally, (ed.), Art Education in the Secondary School, National Art Education Association, 1961, p. 5.

and later goes on to say that:

> There has been much emphasis lately on breadth and variety of experiences. This emphasis is particularly valid at the junior high school level where pupils are curious, experimental and unconsciously involved in a search for self. However, the tendency of adolescents to flit meaninglessly from material to material without becoming involved in discovering its possibilities is all too frequent. Real developmental experiences are possible only as pupils become totally involved with ideas and materials, as they dig below the surface to new discoveries. Junior high schools should have both breadth and depth.[1]

On the other hand the same publication makes a definite stand on depth approach to art by saying that:

> There is a general trend toward quality and depth in art education, an admission that there is a subject matter in art, both factual and conceptual, and that the quality of the product is a very tangible indication of the learning achieved. Art for therapy with no regard for quality is therapy--not art. The highest development of the individual takes place when the student has probed deeply and made new and satisfying discoveries, through which he senses his own growth. The growth is inescapably a part of the experience of the creator.[2]

The objectives of the content of art are described in the New York City course of study which reflects the views held by one segment of art educators:

> Personal experience and experimentation are important aims to learning. In adolescence some of the exuberance and spontaneity of the young child has been replaced by curiosity and interest in causes and effects. For best educational growth art experiences should be organized in such a way that, while allowing for considerable individual choices according to

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[1] Lally, op. cit., p. 13.

[2] Lally, op. cit., p. 19.

> interests, and needs, they ensure a development that is sequential, progressive, and cumulative.[1] (Italics Mine)

Some recent research findings seem to support and justify the view that a "depth" approach to teaching is more beneficial and often desired by the pupils. A research study aimed at discovering the comparative merits of the "depth" and "breadth" approaches to teaching ninth grade pupils is reported by Mattil and concluded that:

> The less popular method, the 'depth' method, produced the greatest gain in individual student progress over a one year period....It may be well to begin earlier with boys and girls in sustained long term projects of depth and with less yielding to their restless demands for variety.[2]

Burkhart also reported that depth or curricular concentration as well as individualized instruction and personal inquiry were related to progress in art.[3]

The range of viewpoints expressed in one publication (and reflected in many others) is an indication that art educators need to come to grip with a sound basic principle of educational philosophy and then put it to a test in the laboratories of teacher-learner situations. It seems clear to the writer that the creative process as well as the resulting art product is--for the adolescent--(and perhaps also younger people) a struggle requiring time in the attempt to achieve a personal style. It cannot be achieved by a "cafeteria-style" art program. It demands depth and concentration.

Methods of teaching

While the art program determines in part the kind of learning that may be expected no one will deny that there are other influences which shape creative individuals. It is necessary to remain aware of the conditions which influence creative thinking and the creative process, and to be able to set up conditions in which the maximum creative potentials of individuals can be realized. Lowenfeld stresses the importance of the individual's environment. He writes: "The best seed will not grow in dry soil while the poorest seed, when it is well cared for, may grow in a rich soil. It is then environment, or education in the broadest sense, which is the main force responsible for our actions."[1]

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[1] Board of Education of the City of New York, Art: Seven, Eight, Nine, Ten, Curriculum Bulletin Number Five, 1954-1955 Series, New York City Board of Education, 1955, p. 1.

[2] Edward L. Mattil, et. al., "The Effect of a 'Depth' vs. a 'Breadth' Method of Art Instruction at the Ninth Grade Level," Studies in Art Education, National Art Education Association, Vol. 3, No. 1, Fall 1961, pp. 75-87.

[3] Robert C. Burkhart, Spontaneous and Deliberate Ways of Learning in Art, Scranton, Pa.: International Textbook Company, 1962.

The pioneering work of the late Hughes Mearns in the 1920's gave impetus to the newly evolving idea that all individuals could express their feelings and thoughts creatively through the arts.[2]

It is now generally agreed that creativity is universal and that environmental conditions play an important part in developing it. Sometimes the creative potential is stifled or erased. What can happen to this enormous and universal resource?

Regardless of the content or organization of the curriculum, the manner in which the teacher handles a class will have an effect on the development of creativeness. Maslow states:

> Self-actualizing creativeness is 'emitted' like radio-activity, and hits all of life, regardless of problems, just as a cheerful person 'emits' cheerfulness without purpose of design or even consciousness. It is emitted like sunshine; it spreads all over the place; it makes some things grow (which are growable) and it is wasted on rocks and other ungrowable things.[3]

The implications which are made refer to the teacher, stressing the great effect the teacher's attitude has on children. Domination, coercion, force, shame or blame are stifling forces which can destroy creativity and originality. Also, it is often true that a domineering attitude in the teacher tends to breed domination in others. The opposite would also be true; a creative teacher can bring out creative responses in his students.

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[1] Viktor Lowenfeld, Creative and Mental Growth, Third edition, (revised), New York: The Macmillan Company, 1957, p. 1.

[2] Hughes Mearns, Creative Power: The Education of Youth in the Creative Arts, Second edition, (revised), New York: Dover Publications, Inc., 1958.

[3] Abraham H. Maslow, "Creativity in Self-Actualizing People," Creativity and Its Cultivation, Harold H. Anderson, (ed.), New York: Harper and Brothers Publishers, 1959, p. 94.

It is generally accepted that a person who does not understand why he performs in the way he does lacks the ability to transfer his knowledge and behavior to new situations. He responds to life in a mechanical and departmentalized fashion. The creative person, on the other hand, responds to life in a positive self-actualizing way. Koffka writes: "Once the creative powers are freed in one direction, ...once the shackles of school passivity are broken at one point, a kind of inner liberation, the awakening of a higher activity sets in ... and the arousing and vivifying of these powers benefit all the subjects taught, even the most logical."[1] It is this liberation which the teacher must promote.

Mitzel and Medley, among others, emphasize the importance of teacher behavior.[2] Eisner in a philosophical argument, also questions the effect of imposed conditions upon the quality of students' learning in art.[3]

Beittel and Burkhart have recently developed a series of personality and art performance tests which provide meaningful clues with respect to the development of creative individuals.[4,5] It is on the basis of their findings that the teachers who participated in this experiment have been selected.

Beittel and Burkhart concluded that it is possible to predict the working strategy of individuals in art and that the battery of tests they have developed are appropriate for educational experimentation. They have classified individuals according to two working strategies - the one spontaneous and the other divergent.

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[1] Kurt Koffka, The Growth of the Mind, New York: Harcourt, Brace and Company, 1928, p. 48.

[2] Harold E. Mitzel and Donald M. Medley, "A Tentative Framework for the Study of Effective Teacher Behavior," Journal of Experimental Education, Vol. 30, No. 4, June 1962, pp. 317-320.

[3] Elliot W. Eisner, "A Paradigm for the Analysis of Visual Problem Solving," Studies in Art Education, National Art Education Association, Vol. 3, No. 1, Fall 1961, pp. 47-54.

[4] Kenneth R. Beittel, "The Effect of Self-Reflective Training in Art on the Capacity for Creative Action," Cooperative Research Program Project #1874, Office of Education, U. S. Office of Health, Education, and Welfare, The Pennsylvania State University, 1964.

[5] Burkhart, Robert C., Spontaneous and Deliberate Ways of Learning in Art, Scranton, Pa.: International Textbook Company, 1962.

> The objective of a divergent strategy is primarily discovery, whereas the objective of the spontaneous student is primarily problem-solving. ...With a spontaneous student, the problem is held constant and the procedure is varied until an appropriate procedure emerges which leads to the solution of the problem. Thus the innovation in spontaneous work is procedural. This is a process orientation. ...The divergent student varies the goal rather than the procedure. He controls the process in order to intellectually search for ideas which will lead to new discoveries."[1]

Individuals within each of these two strategies are measured on a continuum from high to low. Similar (if not identical) classifications have been made by researchers in other disciplines-namely by Westcott[2] and MacKinnon.[3]

The working strategy of individuals or the process is stressed as being an important factor in creativity - this may be significant not only with regard to art production but also in the teacher's style or method of teaching art.

General research methods used in the investigation

The present study was designed with an experimental-research approach. It is a method, used by psychologists and educators as well as some art educators, which has only recently been applied to the arts. Its applicability to the arts has been subject to much criticisms and varying opinions about it exist. Perhaps research in this area has been disturbing to some because it threatens a security or a myth which for a long time has been attached to the "private world of the artist." Lee[1] and Thurstone[2] have presented strong arguments in attacking this view.

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[1] Kenneth R. Beittel and Robert C. Burkhart, "Strategies of Spontaneous, Divergent, and Academic Art Students," Studies in Art Education, National Art Education Association, Vol. 5, No. 1, Fall 1963.

[2] Malcolm Westcott and Jane Ranzoni, "Personality Correlates of Intuition." Paper read at Eastern Psychological Association Meetings, Atlantice City, N. J., April 1962.

[3] Donald W. MacKinnon, "The Creativity of Architects," Paper read at the 1962 University of Utah Research Conference on the Identification of Creative Scientific Talent, Brighton, Utah, June 1962.

As a result of this prevailing climate most objective research in the area of art and art education has, formerly, been done by people in other disciplines--mainly psychologists. Only recently have art educators become involved in research of this kind. Thomas Munro has recommended, as early as 1928, that research based on scientific analysis has a significant contribution to make to the further development of the arts.[3] Later he (along with others) again points to the general scarcity of research and controlled experiments in art education.[4] It must be recognized that research can partially help test existing theories and create conditions for the foundation and evolution of new ones. However, it is of limited value in itself; but, when integrated with, and based on other research findings, it takes on a broader importance.

Most research related to art education has, until recently, been mainly concerned with problems of description and measurement. Beittel writes, "There are not many experimental studies in which some treatment is applied or some hypothesis put to a test.[5] Harlan Hoffa also emphasizes the need for research:

> In summary, the need for research into the 'outcome and effects' of art experience upon creative behavior is becoming increasingly strong and must be met with an increasing volume of high quality research if art education is to meet its current challenges.[6]

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[1] Harry B. Lee, "On the Esthetic States of Mind," Psychiatry, Vol. 10, No. 2, 1947-1948, pp. 281-306.

[2] Louis L. Thurstone, "The Measurement of Values," The Psychometric Laboratory, University of Chicago, Vol. 77, 1952, pp. 1-9.

[3] Thomas Munro, Scientific Method in Aesthetics, New York: W. W. Norton and Company, 1928, p. 101.

[4] Thomas Munro, "School of Instruction in Art," Review of Educational Research, Vol. 16, No. 3, April, 1946, pp. 161-181.

[5] Kenneth R. Beittel, "Art," Encyclopedia of Educational Research, Third edition, Chester W. Harris, (ed.), New York: The Macmillan Company, 1960, p. 31.

[6] Harlan Hoffa, "Overview: Outcome and Effect," Art Education Bulletin, Vol. 18, No. 4, April 1962, p. 67.

Although the writer has strong convictions about the importance, value, and contributions of research in art education, such as the study undertaken here, he does not minimize the role of theoretical and philosophical thinking. It must be pointed out that research methods are only tools which continuously need to be evaluated. In the case of the arts they deal inevitably with people or with their performances and, thus, are subjective to a certain extent. Research methods and research findings must then be considered in light of the human values which present-day society holds.

CHAPTER II

PROCEDURES OF THE INVESTIGATION

The general design, limits and procedures of this study were, in part, determined by the nature and structure of the Children and Teen-Age Art Classes of the Art Education Department of the University which has been the main interest and responsibility of the writer during the past five years. This chapter includes relevant information within the framework of these classes as it pertains to (1) the design of the study, (2) the treatment of the subjects, (3) the collection of the data, and (4) the art judging procedures of the pre-tests and post-tests.

I. DESIGN OF THE STUDY

Description of the student-subjects

Boys and girls ranging in age from thirteen to seventeen and attending public school in the College Area School District, State College, Pennsylvania, consisted the basis for the selection of the student-subjects. A letter was prepared inviting students to enroll in the Special Art Classes for Teen-Agers to be held at the University (see letter, page 102, Appendix A). The number of letters sent was aimed at soliciting the interest of about sixty to seventy students in enrolling in art classes of the experiment. Letters were sent (1) to students in grades nine through twelve who were scheduled to take art and/or crafts as part of their regular program in the public schools that year and (2) to students in grades nine through twelve who had previously been enrolled in the Teen-Age Art Classes at the University but were not taking art or crafts in the public schools. A total of 375 letters were mailed. The response was enthusiastic and the number of individuals interested exceeded by far the predictions made. Students were accepted on a first-come first-served basis.

Sixty-five students comprising the original population* were assigned to one of four groups on the basis of a series of tests which will be discussed later.

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*The original population is different from the final population inasmuch as some student-subjects were eliminated from the study for various reasons.

Description and selection of teacher-subjects

Third year college students majoring in Art Education at The Pennsylvania State University and who planned to take Art Education 489[1] as part of their program during the Fall term of 1964 formed the basis for the selection of the teacher-subjects. During the Spring term of 1964 a list of thirty-two individuals who came under this classification was compiled. The design was to find four pairs of individuals who were as alike as possible with repsect to their working strategy in art--four of whom could be regarded as highly spontaneous in their strategy and four of whom could be regarded as highly divergent in their strategy.

Advantage was taken of an independent study conducted that Spring by Dr. Robert C. Burkhart[2] which in part measured the working strategy of most of the individuals who were eligible for this experiment. The results of these tests were made available to the writer and in cooperation with Dr. Burkhart the eight most desirable candidates were tentatively selected. They were to be assigned to four groups of student-subjects on the basis of a series of tests administered to them during the Fall 1964 and aimed at verifying their working strategy as determined during the previous Spring term. The two individuals with the clearest spontaneous strategy and the two individuals with the clearest divergent strategy were assigned as teachers and their counterparts were assigned as observers.

Administration and description of pre-tests to student-subjects

On the first week of class the student-subjects were randomly assigned to report to four rooms with similar physical and procedural testing conditions for the purpose of administering to them two paper and pencil tests and three art performance tests. The three art tests were used in matching the students into four groups. These tests together with the paper and pencil tests were also used as pre-test measures in the analysis of the data; a full discussion of them will be made later. Only the art tests as they relate to matching procedures are discussed here.

The three art tests consisted of two drawings of the same still-life and one drawing of a figure. Detailed instructions about the art tests were given out to the students

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[1] Art Education 489 is a three credit course, described as Art Experiences with Children. Supervised observation and teaching in children's art classes; analysis of their creative expression. Prerequisites: A. Ed. 435 or 436; or A. Ed. 3 and 3 credits in elementary education.

[2] Dr. Robert C. Burkhart, Research Associate in Art Education at The Pennsylvania State University has done considerable research with spontaneous-divergent art strategy measures.

(see page 103, Appendix A). It was felt that three drawings would provide a comprehensive picture of the students' art work from which the analysis could be made.

In order to give students an opportunity to "warm up" they were asked to make two "Interpretations of a Still-Life." For this purpose an interesting and exciting still-life was constructed and used to serve as a common visual motivational experience for the students. The third drawing test was based on an imaginative motivational experience of the human figure and students were asked to interpret "A Mood or Emotion of the Human Figure."

Since the materials used could conceivably affect the art work, all students were provided with 12" x 18" white drawing paper, drawing pencils and graphite sticks. These materials were selected because of their ease in handling and because it was assumed that students would be familiar with them.

As they were working a photographer moved around the room taking pictures of each of their three drawings after about 3, 9 and 15 minutes. These pictures were taken in order to provide the data from which the art strategy of the students could be assessed. These series of process photographs were used to measure the art strategy of the students and formed one of the two sets of data used in matching the students into four groups. The other set of data consisted of the final art product of the three art tests and was used to measure Original-Aesthetic Quality.

Art judging procedures of pre-tests

The art tests were judged for the following three criteria: (1) Original-Aesthetic Quality, (2) Spontaneous Art Strategy and (3) Divergent Art Strategy which have already been defined (see page 4).

The three art performances of the pre-tests were used in order to match the students into four groups as alike as possible with respect to the three criteria under consideration. The data collected for this purpose consisted of the final art product and three process photographs for each of the three tests.

In addition, it will be recalled, that two paper and pencil tests were also administered and collected. However since they are not related to matching procedures they are not discussed in this section but will be discussed later.

The process photographs were used to measure the art strategies of the students. The three photographs of the three tests were prepared as one unit since it was felt that this would help the judges in evaluating each student's overall spontaneous and divergent art strategy.

The data used to measure Original-Aesthetic Quality was based on the "best" of the three drawings of each student as evaluated by a team of three judges consisting of a doctoral student, the assistant to this project and the writer. Using the definition of Original-Aesthetic Quality the best work was selected by having each of the three judges vote independently for one of the three drawings made by each student. The drawing receiving at least two votes was selected for matching purposes.

Three judge experts evaluated independently the best art product thus selected. They were provided with the operational definition of Original-Aesthetic Quality with which they had already become familiar and were asked to judge the drawing by using a 9 point numerical rating scale--1 being considered as "very low" and 9 as "very high." Extreme rather than moderate values were encouraged. However, no requirements were placed on the frequency distribution of the scores. As a first step, each judge evaluated the drawings into three categories - high, medium and low, and then evaluated each separately into 3 additional categories thus forming the 9 point scale. Each judge was free to re-evaluate his scores at any time during the judging period.

The process photographs of the three tests for each student were mounted on paper and judged as a unit for both Divergent Art Strategy and Spontaneous Art Strategy. Two judge experts (doctoral students other than those judging for Original-Aesthetic Quality) were selected on the basis for their previous judging experience. Each judge worked independently and was provided with the operational definitions of Divergent Strategy and Spontaneous Strategy. Separate judgments were made on each of these two criteria. The other judging procedures were similar to those previously described for Original-Aesthetic Quality.

Reliability of art judges

The reliability of the judgments made on each of the three criteria was measured by a symmetric correlation program using the I.B.M. Computation Center of the University.[1] This statistical technique computes correlation coefficients of all possible pairs of variables plus the means and standard deviations of all variables. The variables for each criteria were the scores of each judge. Tables 1 and 2 show the correlation coefficients for the judged criteria.

Original-Aesthetic Quality. The correlation coefficients for Original-Aesthetic Quality ranged from .403 to .627 and interpreted as being moderate to high.

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[1] M. E. Roberts and A. T. Wink, "Symmetric Correlation Program Floating Input," (Corel, 11.3.003, Revised). Computation Center, The Pennsylvania State University, January, 1964. (Mimeographed.)

TABLE 1

CORRELATION AMONG JUDGES
FOR ORIGINAL-AESTHETIC QUALITY - PRE-TESTS ONLY

Judge	A	B
B	.627	
C	.449	.403

N = 65 ^{r}.01 level = .317

TABLE 2

CORRELATION AMONG JUDGES
FOR ART STRATEGY - PRE-TESTS ONLY

	Spontaneous Strategy	Divergent Strategy
Judge A to B	.699	.565

N = 65 ^{r}.01 level = .317

Divergent Art Strategy. The correlation coefficients among the two judges for Divergent Strategy were .565 and interpreted as being moderately high.

Spontaneous Art Strategy. The correlation coefficients among the two judges for Spontaneous Strategy were .699 and interpreted as being high.

Since all correlations were significant beyond the .01 level the evaluations made by the judge experts for the three criteria were accepted and the data used for further analysis.

Matching of student-subjects

The total of the ratings of the judges for each criteria was assigned as the final score of each student on the basis of which they were matched into four groups. Through observation and inspection an attempt was made to find sets of four students who were as alike as possible with respect to the three judged criteria. The four students in each set were then assigned at random to one of the four groups of the experiment. This matching methods seemed feasible within the short period of time available to form the groups.

Nevertheless in order to determine the extent to which the groups were matched a statistical comparison was made later on the basis of the scores of the three judged criteria. The data was processed at the Computation Center of the University by using a library program entitled: "Differences Between Means, Non-Correlated Samples of Unequal Size."[1] This program computes t-values for differences between the means of every variable in sample one and the means of every variable in sample two. The two samples may be equal or unequal in size and are non-correlated.

The equation for this technique is:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{s_{\bar{x}_1}^{2} = s_{\bar{x}_2}^{2}}}$$

in which the $\bar{X}$'s are the means and the $s_{\bar{x}}^{2}$'s are the square of the standard errors of the means.

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[1] A. T. Wink, "Difference Between Means, Non-Correlated Samples of Unequal Size," No. 11.5.005, T-NU. Computation Center, The Pennsylvania State University, August, 1962. (Mimeographed.)

Table 3 shows the t-values between the means for the three variables and the t-value that must be reached for the .10 level of significance. Through inspection it may be seen that even at that level, none of the t-values are significant and it is therefore safely concluded that the four groups are alike and matched with respect to the three judged criteria.

Matching of teacher-subjects

It will be recalled that the eight individuals who were to take part in this experiment--either as "teacher" or "observer"--had already been tested in another study which determined their working strategy in art. To verify their strategy several months later, they were given two art tests similar to those administered to the student-subjects. One based on "Interpretation of a Still-Life" and the other based on "Expressing a Mood or Emotion of the Human Figure." Three process photographs were taken for each test. Through observation and inspection of the photographs the two individuals with the clearest spontaneous strategy and the two individuals with the clearest divergent strategy were assigned as "teachers" and their counterparts as "observers." Figures 1 and 2 show the art work of the "teachers" and the groups to which they were assigned. When the art work of those teachers are observed in relationship to the definitions of the strategy criteria it is seen that there are real differences in the approach to art between the divergent and the spontaneous teachers. On the other the two divergent and the two spontaneous teachers are fairly much alike although more likeness would have been preferred.

The roles of both "teachers" and "observers" will be discussed in another section of this chapter.

Duration of the experiment

The experiment was conducted during the Fall term of 1964 corresponding to the calendar of the University. The four groups met regularly each Saturday from 8:45 to 10:45 A.M. for a period of eleven weeks beginning September 26 and ending December 5, 1964. The first and last week were taken up in testing the groups. The actual treatment period was therefore eighteen hours. Although it would have been desirable to conduct the experiment over a longer period of time this was not possible in view of the fact that the teachers selected were following a term system and were also enrolled in Art Education 489.

Summary of the experimental design

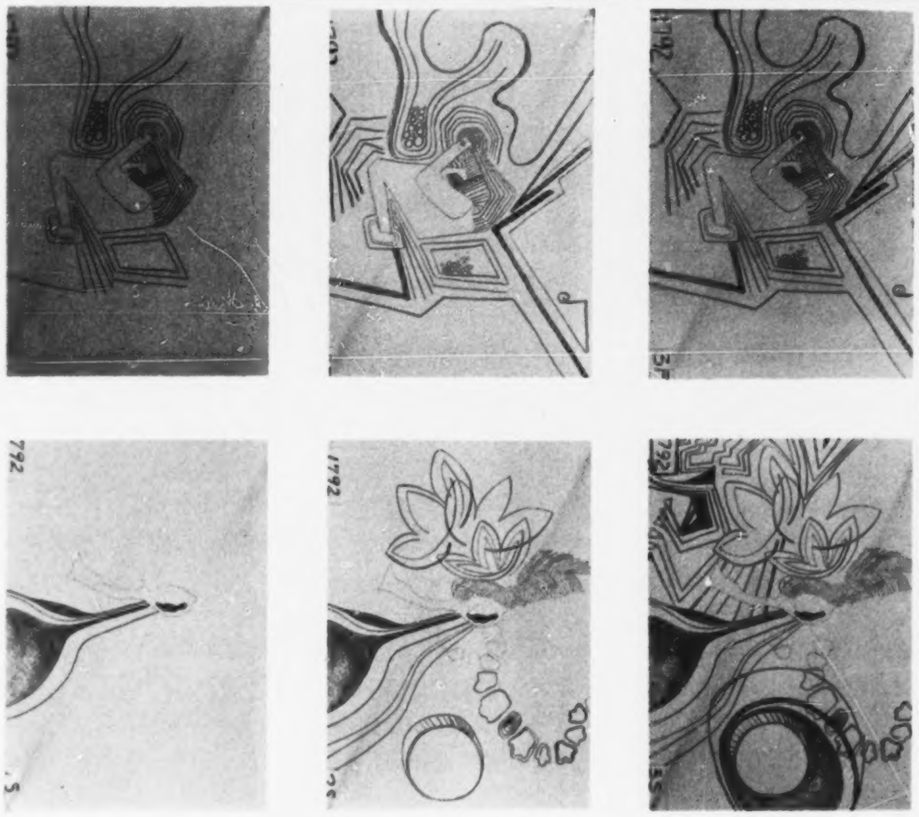
Figure 3 condenses and abbreviates the basic structure of the experimental design of this study. The sixty-five students comprising the original population (reduced to 52 in the final analysis) were given a series of three art performance tests on the basis of which they were matched into four groups based on Original-Aesthetic Quality, Spontaneous Art Strategy and Divergent Art Strategy. Eight third year college

TABLE 3

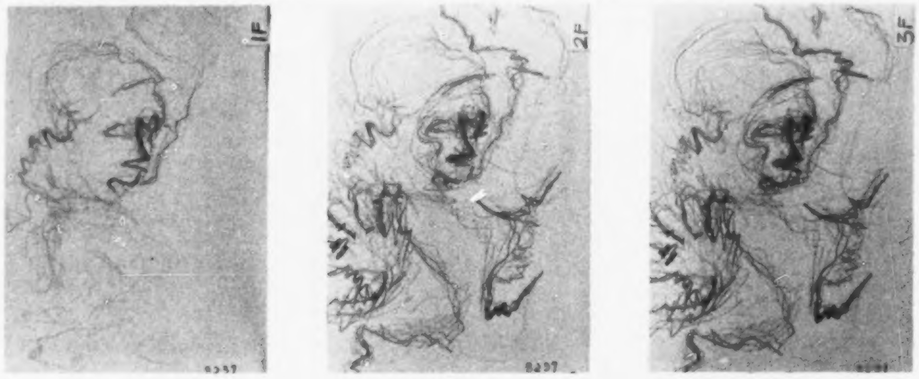
T-VALUES FOR DIFFERENCES BETWEEN MEANS FOR THE PRE-TESTS OF THE THREE JUDGED ART CRITERIA OF THE FOUR GROUPS OF THE EXPERIMENT

	t-value between Means				t-value
Group*	Original-Aesthetic Quality	Divergent Art Strategy	Spontaneous Art Strategy	Degrees of Freedom	at .10 level
A-B	0.145	0.187	0.921	30	1.70
A-C	0.320	0.944	1.240	19	1.73
A-D	0.889	0.073	0.702	19	1.73
B-C	0.516	0.758	0.365	31	1.70
B-D	1.135	0.268	0.299	31	1.70
C-D	0.618	1.057	0.671	30	1.70

*Group A: Prescribed Course of Study, Spontaneous Teacher
B: Prescribed Course of Study, Divergent Teacher
C: Self-Developed Course of Study, Spontaneous Teacher
D: Self-Developed Course of Study, Divergent Teacher



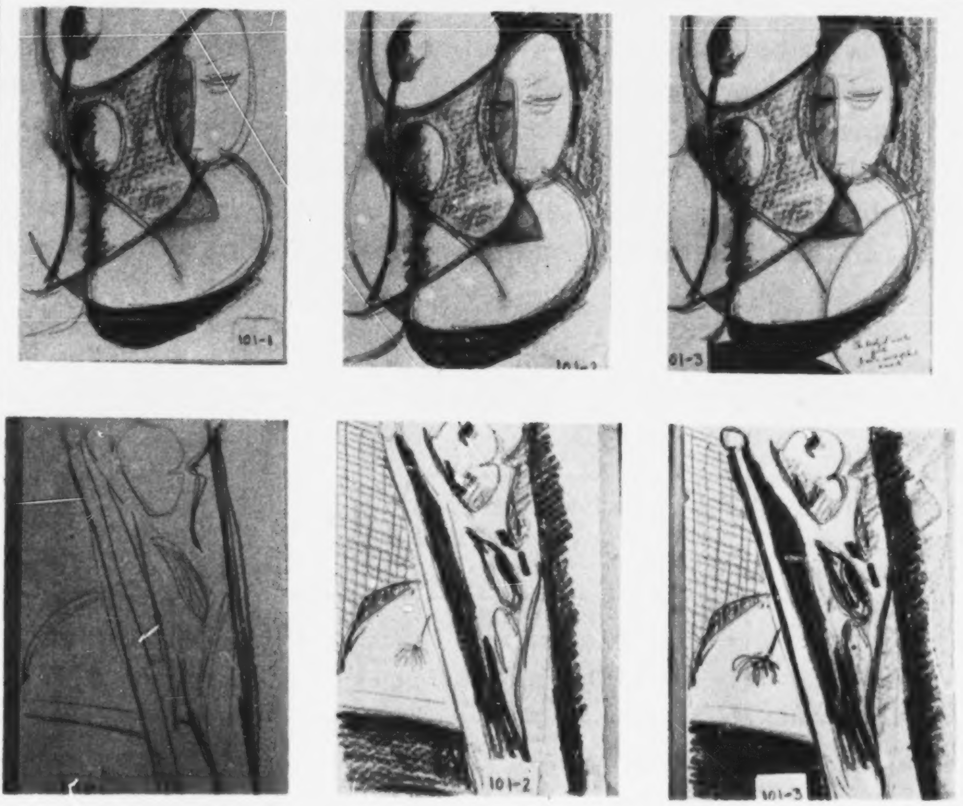
TEACHER ASSIGNED TO PRESCRIBED COURSE OF STUDY



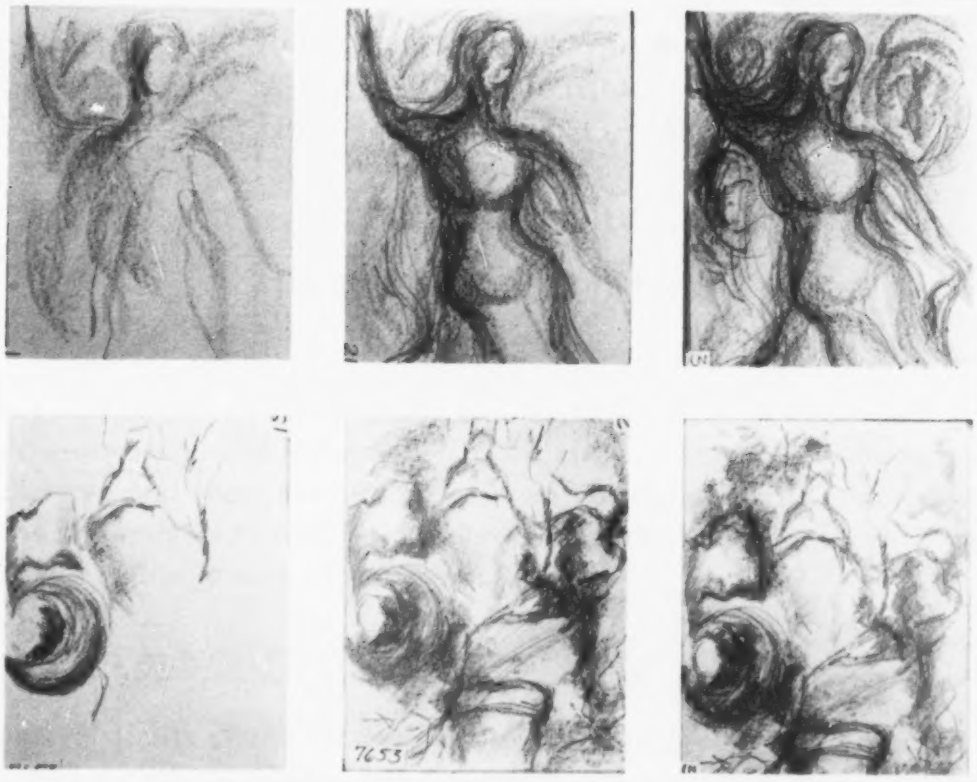
TEACHER ASSIGNED TO SELF-DEVELOPED COURSE OF STUDY

FIGURE 1

DIVERGENT ART STRATEGY TEACHERS



TEACHER ASSIGNED TO PRESCRIBED COURSE OF STUDY



TEACHER ASSIGNED TO SELF-DEVELOPED COURSE OF STUDY

FIGURE 2

SPONTANEOUS ART STRATEGY TEACHERS

students in art education were selected on the basis of tests predictive of their art strategy. The two with the clearest Divergent Art Strategy and the two with the clearest Spontaneous Art Strategy were assigned as "teachers." Their counterparts were assigned as "observers." One spontaneous and one divergent teacher was assigned to follow a "prescribed course of study" with their respective student groups, while the other two teachers were assigned to follow a "self-developed course of study."

Method of teaching or working strategy		Content of the Art Program	
		Prescribed course of study	Self-developed course of study
	Spontaneous teacher and observer	Group A N = 09	Group C N = 15
	Divergent teacher and observer	Group B N = 14	Group D N = 14

FIGURE 3

EXPERIMENTAL DESIGN FOR THE EFFECTS OF TWO PROGRAMS AND TWO METHODS OF TEACHING UPON THE QUALITY OF THE ART PRODUCTS OF ADOLESCENTS

II. TREATMENT OF STUDENTS

Since it was hypothesized that the way students learn is dependent upon that which is taught--content, and the manner in which it is taught--method, an attempt was made to observe and later evaluate these two variables. This section describes the treatment of the students in terms of art program or content and in terms of teaching method or strategy in the groups of the experiment.

Treatment of students in terms of art program variability

The general limits of the art program of the four groups was based on a depth approach to drawing and painting. The treatment was therefore restricted and concentrated in one area of art rather than in a variety of activities. It included a narrow and selected range of related two-dimensional media such as pencil, charcoal, india ink, water color and cut paper, and combinations of these. In other words, a range of materials was used which comes under the heading of "drawing and paining." Emphasizing, nevertheless, exploration and experimentation with those materials and combining them in different ways. Within these limitations, two kinds of art programs were structured and followed: (1) a prescribed art program, and (2) a self-developed art program.

Prescribed art program. The writer developed an art program in drawing and painting the human figure based on a reinforced depth approach to teaching based not only on the literature in the field but also on the writer's long contact with adolescents both in public school situations and in the Children and Teen-Age Art Classes at the University. The program was especially designed to meet the needs and interests of teen-agers (14-17 years old) attending the Art Classes of the Art Education Department of the University. The art program or course of study on Drawing and Painting the Human Figure was prepared in the Spring 1964 and is reproduced in detail on pages 105 to 141, Appendix B.

It was felt that a course of study could be prepared in advance and prescribed to a particular group of teen-agers providing sufficient information was available about the general nature of the population from which the subjects were to be selected. In this case it should be mentioned that the students for whom the course of study has been written are of a fairly predictable background. They reflect the community of which the University is the center. Their artistic abilities and interests have been observed in the past through the Teen-Age Art Classes.

The hope was to prescribe a course of study which would be of benefit to the teacher by providing her information which she is generally not able to accumulate for herself due to lack of time, resources, experiences, or finances. The teachers following this prescribed course of study were asked to adhere to the nine outlined activities in full realization that a certain degree of autonomy would be desirable. The activities were planned in such a way as to provide both teachers and students with a general framework within which to work and express themselves creatively. While certain specifics were outlined the teacher was free to supplement the lessons with anything considered appropriate. However, the activities were not to be altered through omissions or substitutions. It was made clear that the purpose of the course of study was only to control the "content" of it--in terms of development, sequence and resources.

The art media of the prescribed course of study consisted of a variety of two-dimensional materials presented and introduced in a progressive manner. During the first three weeks the students worked only in black and white and later they were introduced to color.

The topics or themes for the course of study were based on the human figure and the self.

It was believed that teen-agers usually have a keen interest in the human figure due to the fact that they are going through a period of transition from childhood to adulthood in which physical development plays an important part. Often their interest in the figure is matched by a limited ability to draw it. The task of writing the art program and of the teacher who implemented it was therefore to provide the students with specific guides through which they could, not only improve their ability to draw the figure but, more importantly, to draw it in a personal way--in a way which reflects an individualized style.

In introducing the drawing of the human figure it was assumed that many students might have preconceived ideas about what is meant by drawing--some thinking in terms of "one right way," others in terms of "realistic rendering" resulting in stiff drawings, and still others in terms of an "I can't draw" attitude. In order to give all students a positive approach to drawing the human figure specific directions were set up as part of the art activities. It was felt that, through directed guidance, students would be able to gradually develop a personal style of drawing meaningful and satisfying to them and which at the same time had aesthetic and expressive value.

A part of the planned activities consisted of student activities outside of class. Quite often students and teachers associate an art course only with the actual classroom activities. The importance and need of students to carry on art activities outside classroom is too often overlooked. The abilities and potentials of students are therefore not sufficiently explored. It was felt that independent out-of-class art activities are of tremendous importance and with this in mind each of the nine art activities of the prescribed course of study provided for specific work which student ought to do from one week to the next. This outside art work was directly related to the actual classroom work which immediately preceded or followed it. Sometimes it took the form of studio work and at other times it was more closely related to "appreciating art" through visits to places where art work is displayed.

The task of the teacher was to see to it that students developed a positive attitude toward doing art work from week to week and at the same time to realize that the idea may be new to many of them. The equivalent of about one hour's work was planned in the activities outlined. The teacher was responsible for clarifying any questions the students might have regarding the outside work. Each week she was to evaluate with the students the work done and give them sincere and helpful guidance and criticism in order to help them develop a personal way of working which is both aesthetic and expressive.

In general the art program tried to place emphasis on art history and appreciation as it related to the studio work. Since it was felt that this would both broaden and reinforce to students' attempt at an individual style of painting. Among the several instructional aids introduced as part of the prescribed course of study was the Audio-Graphic Machine which is relatively unknown in art education circles and therefore needs to be described in detail.

The Audio-Graphic Machine is a self-learning or reinforcement teaching-learning device which is programmed simultaneously with visual and audio materials. It has originally been designed for use by individual students and throughout this course it was available on that basis. In other words, it gave individual students an opportunity to motivate or re-motivate themselves after an activity has been presented through using various programmed materials. It was hoped that the materials would meet the needs and interests of different kinds of students.

In addition to being used as a self-learning device the Audio-Graphic Machine was also used to present an activity to the class as a whole. Although this is not the primary function of the machine it was felt that it would be physically feasible to group fifteen students around it in such a way that they would be able to see the slides presented.

The materials programmed for the Audio-Graphic consisted of different series of slides and taped commentaries related to the activities in which the students are engaged. They were about ten minutes long. After the art work has been selected and copied onto 2" x 2" slide transparencies it was arranged in the desirable sequence in an Airequipt Slide Cartridge. Following a prepared script the narration was recorded on a tape in such a way as to correspond to the visual material. The visuals were then projected from the rear of a frosted plastic screen while the corresponding commentary was transmitted through a cartridge-type magnetic tape.

It was felt that this Audio-Graphic has good possibilities for art education. It was only a small part of the present study and, in the opinion of the writer, merits more intensive investigation.

The other instructional aids for the prescribed course of study were of a conventional nature. They included a selected number of art books available not only during class time but also for loan from one week to the next. In addition slides and films were also used.

Self-developed art program. While two teachers and observers followed a prescribed course of study, the other two were asked to develop independently their own art program within the limitations of the depth approach previously described, namely drawing and painting. In order to give them the opportunity to prepare an art program similar to the one prescribed to the other two teachers they were given a list of the resources that were used. In this self-developed art program they thus had the opportunity to consider the resources although they were not required to use them.

Treatment of students in terms of variability of teaching methods

It was assumed that the teacher is an important variable who may have an effect upon the quality of the art products of the students not only in terms of their Original-Aesthetic Quality but also in terms of their Art Strategy. One treatment of the study was thus concerned with the influence the teacher has in her group which would be reflected in how art is taught or the method by which it is taught. Some current research has already indicated that the working strategy of individuals in art may be predicted and it will be recalled that it is on that basis that the teachers and observers have been selected. Under a rationale which follows gestalt-holistic concepts it was hypothesized that these art strategies would manifest themselves in the methods or strategy the teacher uses in the classroom as well as in her own art work. The problem was to discover the degree in which measures predictive of art strategy are reliable when compared with actual teaching situations as they affect students' art productions.

While the prescribed course of study constituted one part of the treatment, the method or strategy of teaching the materials was left up to the teacher and constituted the second part of the treatment of the four groups. One divergent and one spontaneous teacher and observer were assigned to the prescribed course of study and similar assignments were made for the self-developed course of study. In each group the teacher and the observer were of the same strategy.

Orientation of teachers and observers

Among the eight individuals selected for this experiment four were assigned as "teachers" and the other four as "observers." At an orientation meeting held at the beginning of the term the general design and structure of the experiment as well as the respective roles of the teachers and observers were explained and discussed.

The teachers' roles were either to develop their own art program or to carry out a prescribed art program assigned to them. In that capacity they were responsible for the students in their group, for the overall classroom climate or atmosphere and for the substance and content of the subject matter. The teachers always presented and evaluated the lessons with the class as a group and also took the initiative in determining student-teacher interaction during the actual studio activity.

The roles of the observers were to act as a recorder of the activities of the teachers in terms of their method of teaching and content of the subject. They did not initiate discussions, presentations or evaluations, although it should be said that they were permitted and encouraged to get to know the students and become one of the group.

After the general orientation meeting no further discussions or contacts were made with the researcher since it was felt that this might influence their teaching with respect to either content or method. In a sense the teachers were left on their own with the observers acting as peer evaluators.

Although both teachers and observers were aware of their strategy classification it was stressed and made clear that educational research has not yet found "the right way to teach" and that there is no reason to suspect that one method of teaching is superior to another with respect to art strategy classification.

It was believed that the students usually reflect the personality and attitudes of the teacher who in turn establishes a "climate" for the class as a whole. The teacher was therefore expected to develop her own "rhythm" of teaching. Although she might want to compare herself to other teachers and also reflect upon her own teaching. She was encouraged above all to teach according to her own beliefs and own values.

At the time of orientation a regularly scheduled weekly meeting was arranged for the teachers and observers who were to follow the prescribed course of study and a similar arrangement was made for those developing their own course of study. The two groups were asked not to communicate with one another in order not to contaminate the content-variable.

During the first of these smaller weekly meetings the researcher met with the two teachers and observers who were to develop their own art program. They were asked to prepare whatever program they thought would be desirable for their groups. This could be done on a week-to-week basis or at the beginning of the term. Although each teacher was responsible for her own art program, cooperation between teachers and observers was encouraged.

The two teachers and observers who followed a prescribed course of study also met separately as a group in order to obtain information pertinent to their part in the study. They were given an outline of the course of study. Attention was called to the fact that a minimum amount of preparation was required by them in terms of lesson-planning since each activity was fairly well outlined. In an attempt to equalize the amount of outside work that was required by these two groups, as compared with the two which developed their own art program, certain out-of-class activities were outlined for the teachers and observers. In preparation for each lesson they were asked to do art studio work rather than readings related to lesson-planning or methodology. It should be noticed that in most cases the studio work for the teachers and observers were similar to that which was presented to the students at their following class meeting. The purpose of the out-of-class art studio work was to bring out problems that might be encountered in the classroom. It was hoped that through the actual "doing" of an activity more sensitive and effective teaching and observation would occur.

III. COLLECTION OF DATA

Pre-test and post-test measures

The same series of tests were administered to the students at the beginning and at the end of the experiment and formed the main data used in the analysis of this study. They consisted of three art performance tests which have already been described in conjunction with the matching of the students, namely, two still-lifes and one figure drawing. Two paper and pencil tests were also administered: the FAT and the ISSD-63. They were both primarily developed by Beittel and Burkhart (see references 5 and 6) in an attempt to determine measures which are predictive of the art strategy of individuals. It was felt that in this study those paper tests would be helpful in developing guides which would relate to the art performance tests within the structure of method-content variability.

FAT. (Flexibility and Abstract Orientation Test). "A test of 80 items, 40 of which are of the self-descriptive statement type, 40 of which are word pairs. The statements reflect an action orientation typified by spontaneous flexibility, whereas the word pairs reflect a preference for abstract over concrete words."[1]

ISSD-63. (Test of Ideational and Social Self-Determination). "This is a test which has gone through three revisions and has proven useful in the description of creative action. There are four scales: (1) Complexity, (2) Theoretical Interest, (3) Aesthetic Interest, and (4) Social Self-Determination. A completely new set of items was drawn up by Burkhart and Beittel for the Social Self-Determination Scale in an effort to remove response set imbalance which may have resulted from earlier keys which were all keyed "F" or "False"...Burkhart and Bernheim carried out scaling studies, as part of the Beittel study on all keys, using the Guttman system of scale analysis. Population samples were drawn from art and art education undergraduate majors and non-art majors from Central Michigan University, Indiana (Pennsylvania) State College, and The Pennsylvania State University."[2]

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[1] Kenneth R. Beittel, "Effect of Self-Reflective Training in Art on the Capacity for Creative Action." Cooperative Research Project No. 1874, U. S. Office of Education, The Pennsylvania State University, University Park, Pennsylvania, 1964, p. 148.

[2] Robert C. Burkhart, "Ideational and Social Self-Determination Manual," The Pennsylvania State University, June 1963. (Mimeographed)

Collection of "best" art work of treatment period

All the art work produced by the students was kept by the teachers until the completion of the nine-week experiment. At that time the "best" art work as judged for Original-Aesthetic Quality was selected by four judges (including the researcher) through observation and discussion and constituted the data for analysis of best art work.

Method and content variability data

In an attempt to determine the actual method and content of the art programs of the four groups certain data was collected for descriptive evaluation. This data is merely described here but will be further discussed and analyzed in another section.

Journals. Both teachers and observers were asked to keep a detailed journal including objective as well as subjective observations and reactions to the manner in which the class was taught and the content of what was being taught. These notes were made during as well as after each teaching period. They were also used as a self-evaluative device at the weekly teacher-observer meeting.

Tape recordings. On alternate weeks each class was taped to give the researcher information on dialogue between teacher and students in relationship to amount and kinds of statements and/or questions made.

Observations. The researcher together with an assistant observed the teachers and observers throughout the nine weeks of the experiment in order to determine differences in their methods of teaching, in the role played by the observer, and in the content of the art program. This was done through description.

IV. THE ART JUDGING PROCEDURES OF THE PRE-TESTS AND POST-TESTS

In an attempt to discover possible ways of improving the art judging procedures of the pre-tests and post-tests the reliability of the judges as seen in the pre-tests was examined (see Tables 1 and 2). A frequency distribution of the pre-test scores for each criteria was also made. The frequency polygons, Figure 4, help to visualize these score distributions. It was observed that the distribution is different for the three criteria. Although there is a correlation coefficient range among the judges of almost two points (.403 to .627) for Original-Aesthetic Quality, the corresponding polygon shows that about the same distribution of scores exist for the three judges. For the Divergent and Spontaneous Strategy criteria, on the other hand, there seems to be a more pronounced difference in the distribution of scores although the correlation coefficients among judges are higher.

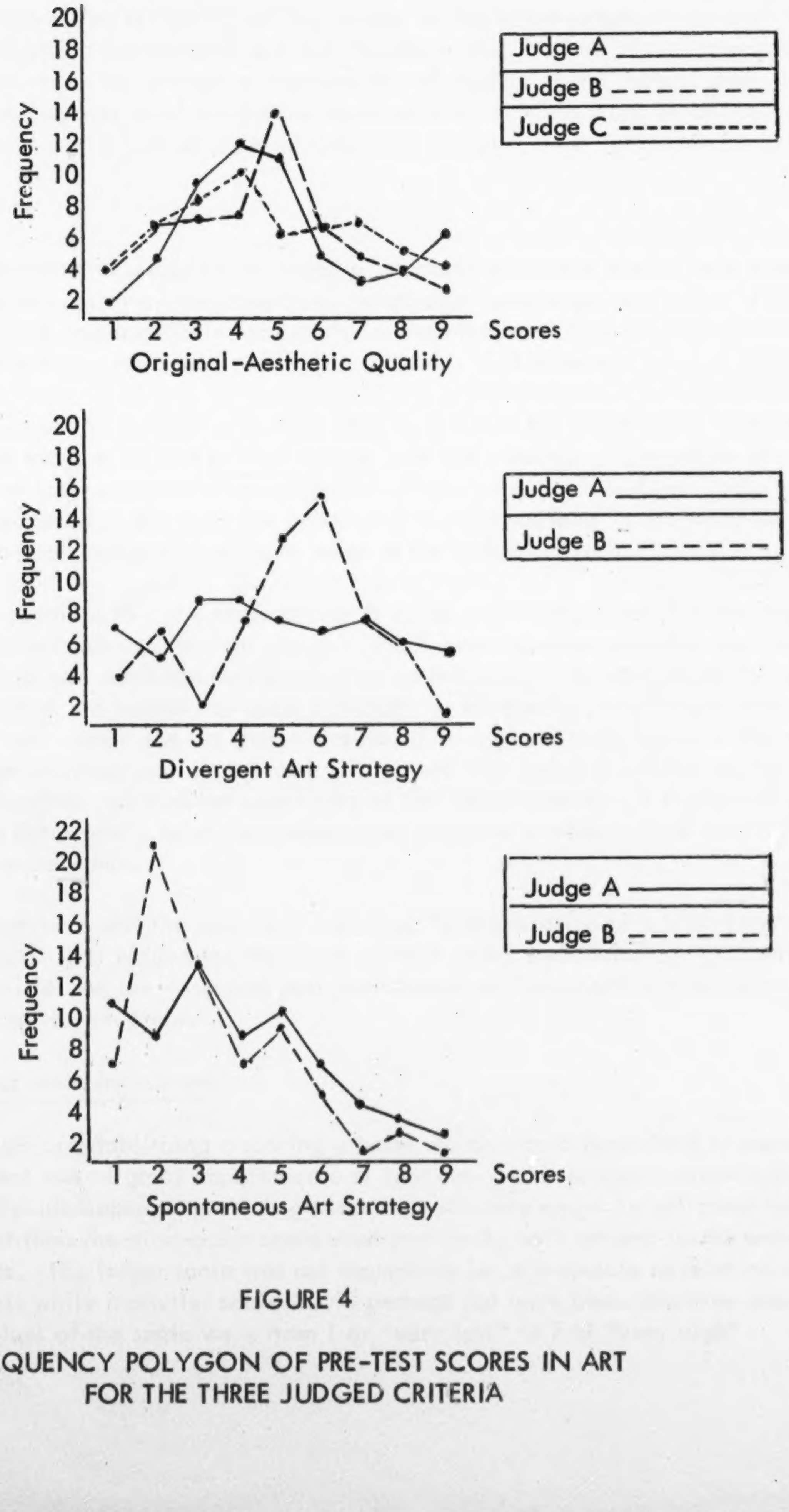


FIGURE 4

FREQUENCY POLYGON OF PRE-TEST SCORES IN ART
FOR THE THREE JUDGED CRITERIA

Observations of the reliability of the judges for the three judged criteria with respect to the correlation coefficients and the frequency distributions of the scores lead to certain speculations in an attempt to improve the reliability of the judges, and although the reliability was good for the pre-tests certain revisions were introduced in the judging procedures of the final pre-test-post-test analysis.

Preparation of data

Before the data was prepared for judging, students who were absent more than three times during the course of the experiment were eliminated from the study. Fifty-two students remained and constituted the basis for the analysis. They produced three drawings each for both pre-tests and post-tests, a total of 312 drawings.

The art tests of the students who were eliminated from the experiment were used, in part, to provide samples for the product-scale, and the training of the judges which will be discussed in later sections of this chapter. These samples proved very helpful since they were produced under the same conditions as the ones used in the study and also represented a good range of quality in terms of the judged criteria.

It will be recalled that the three pre-tests in art were judged early in the study in order to match the students into four groups. These tests together with the post-tests of the 52 students formed the basis for the analysis of this study. In evaluating the pre-tests, it was felt, that the judges had some difficulty in comparing "still-lifes" with "figures," particularly since one art theme was based on a visual experience while the other was based on an imaginary experience. It seemed that judging the two motivational themes together reduced the sensitivity of the measurements. A logical solution decided upon was therefore to have the judges make separate evaluations on each of the two motivational experiences.

The two pre-tests and the post-tests based on "Interpretation of a Still-Life" were mixed at random and judged for the three criteria under consideration. A similar procedure was used for the pre-tests and post-tests based on "Interpreting a Mood or Emotion through the Human Figure."

Seven-point rating scale instrument

The problem of establishing a scoring scheme which would lend itself to sound statistical treatment was of great importance and concern. A seven-point numerical rating scale was decided upon as providing a more satisfactory range for efficient and sensitive judgment than the nine-point scale used previously with respect to the matching of the students. The larger scale was not thought to be as workable in relation to the judging process while a smaller scale would perhaps not have been sensitive enough. The numerical values of the scale were from 1 or "very low" to 7 or "very high".

All the individuals concerned with judging were oriented in the use of the seven-point scale. Only numerical values were used in evaluating the final products and the process photographs; no verbal evaluations were made.

Introduction of the product scale

The three criteria (Original-Aesthetic Quality, Divergent Art Strategy and Spontaneous Art Strategy) used to evaluate the pre-test drawings seemed satisfactory. Nevertheless it was felt that they could be clarified through the introduction of a product scale. In the pre-tests it was noticed that the judges interpreted the criteria in a variety of ways, depending on their background of experiences and standards. The rating scale and the definitions of the judged criteria were, therefore, supplemented with a product scale to be used by the judges as a yardstick in comparing it with the products to be evaluated.

Although a seven-point numerical scale was to be used it seemed that only three of these points needed to be represented in the product-scale for each of the criteria. The alternate points on the scale were selected namely, 6 or high, 4 or medium, and 2 or low. It was decided to have the judges join the researcher and another faculty member from this Department in the selection of the product scale. For this purpose the drawings of the students who were eliminated from the experiment were examined. After some discussion it became fairly easy to pick out three products based on the "still-life" drawings for each of the three criteria. The drawings based on the "figure" however seemed to fall into two thematic interpretations--those dealing only with "the head" and those dealing with the "whole figure." It was therefore decided to select one of each of these two sub-themes as products for each of the three points on the scale. The product scales for the three criteria judged are shown in Figures 5 to 9 and are meant to provide the reader with an essential and necessary frame of reference within which to evaluate a part of this study.

Training session

Some modifications were made (from the pre-test judging) in the constitution of the team of judges which were to evaluate the pre-tests and the post-tests. One judge was added to the Spontaneous-Divergent judge team. For the Original-Aesthetic Quality judge team, two new judges were added and the researcher (who had been a judge for the pre-tests) was removed.

As a result of the experiences with the pre-tests it was decided that the newly constituted group of judges would take part in a training session before undertaking the actual evaluations of the drawings to be used in the analysis.

The training session aimed at improving the reliability among the judges, was not meant to indoctrinate the judges into one way of thinking but rather to permit them

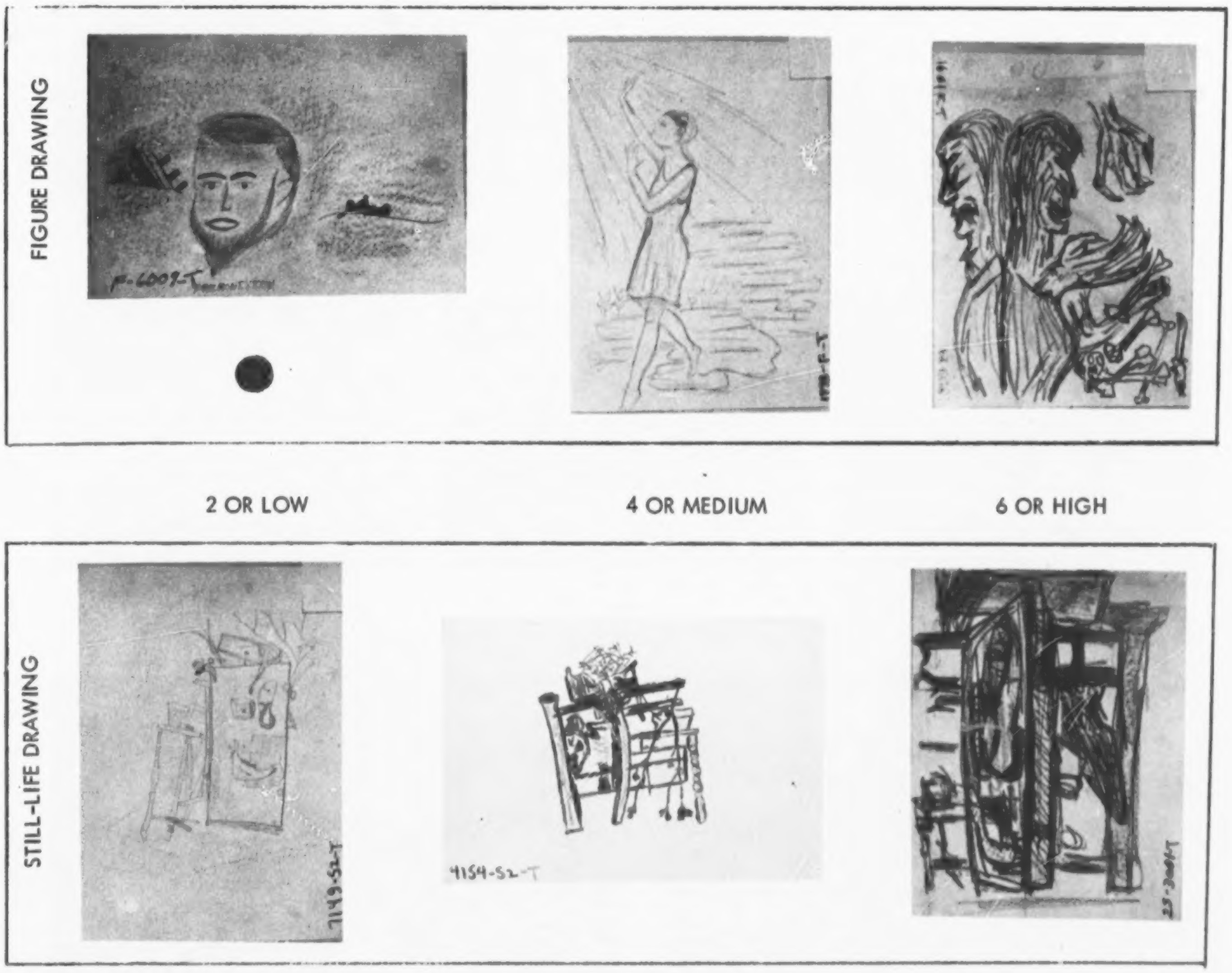


FIGURE 5

PRODUCT SCALE FOR ORIGINAL-AESTHETIC QUALITY

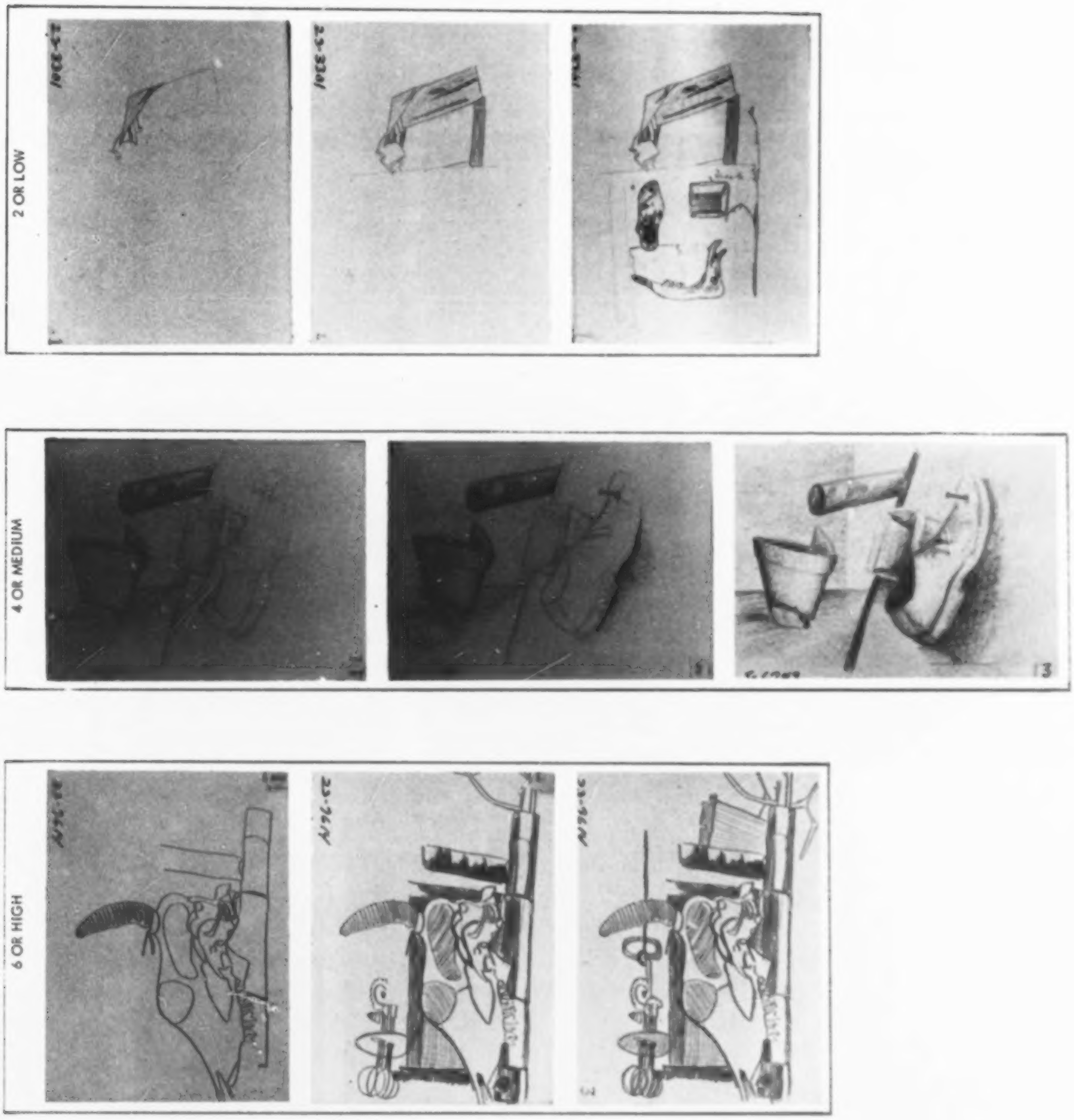
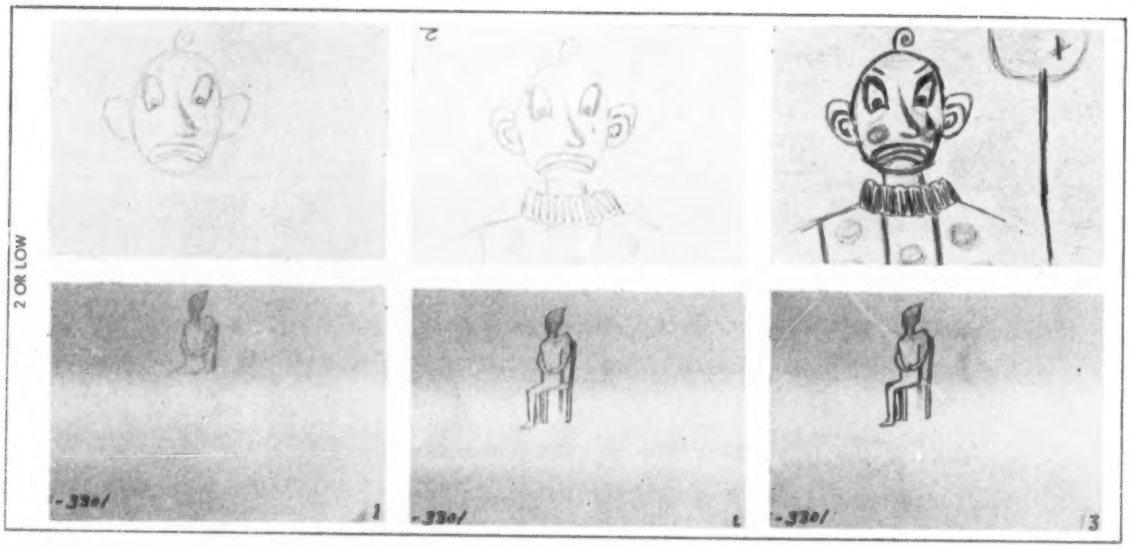
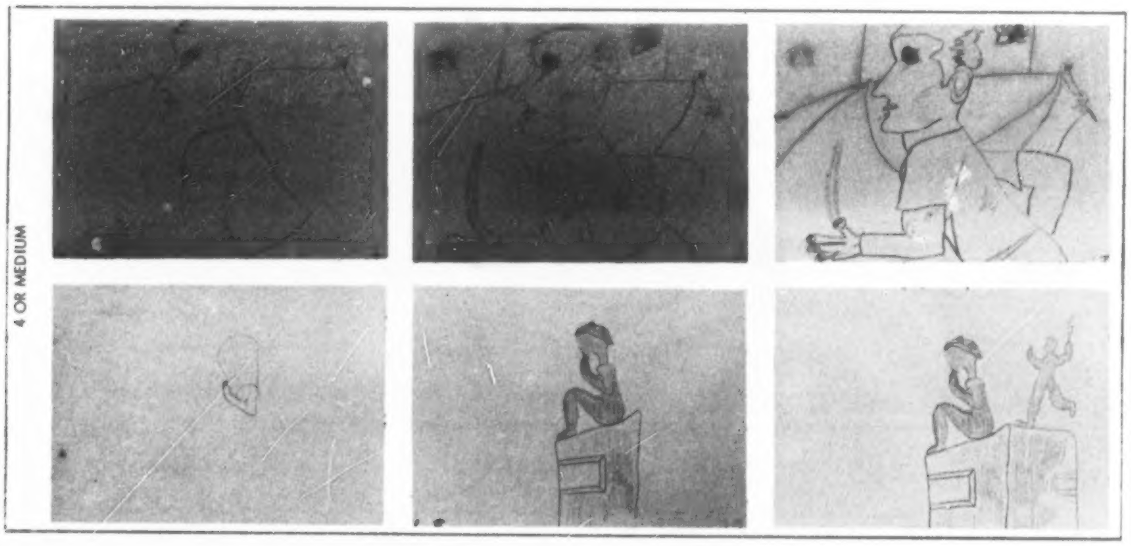


FIGURE 6

PRODUCT SCALE FOR DIVERGENT STRATEGY--STILL-LIFE DRAWING


2 OR LOW


4 OR MEDIUM

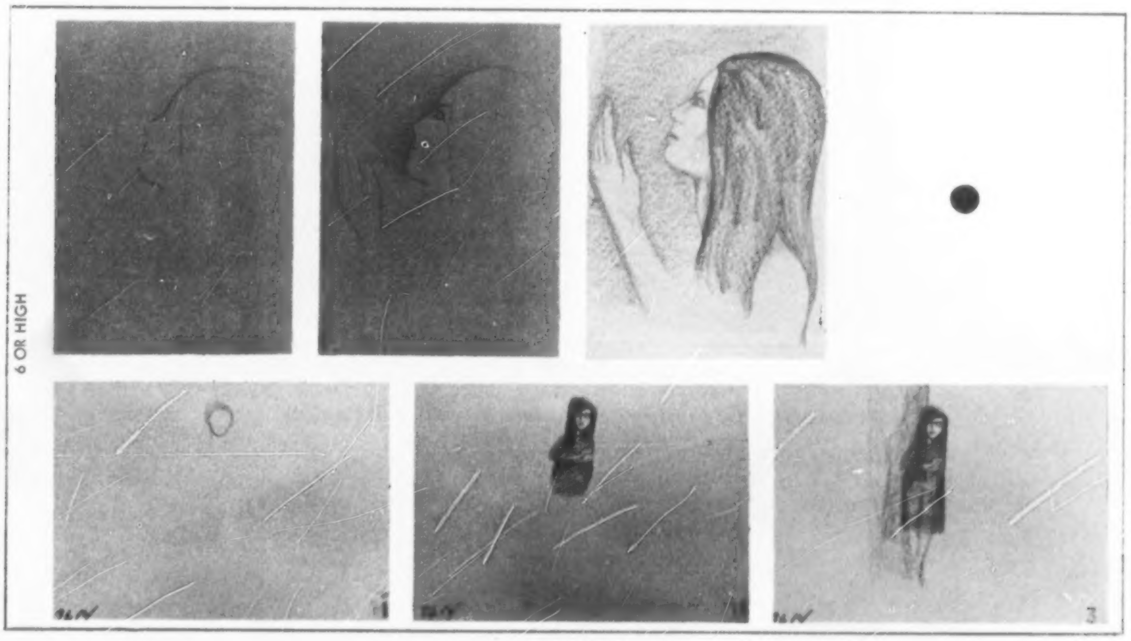

6 OR HIGH

FIGURE 7

PRODUCT SCALE FOR DIVERGENT STRATEGY--FIGURE DRAWING

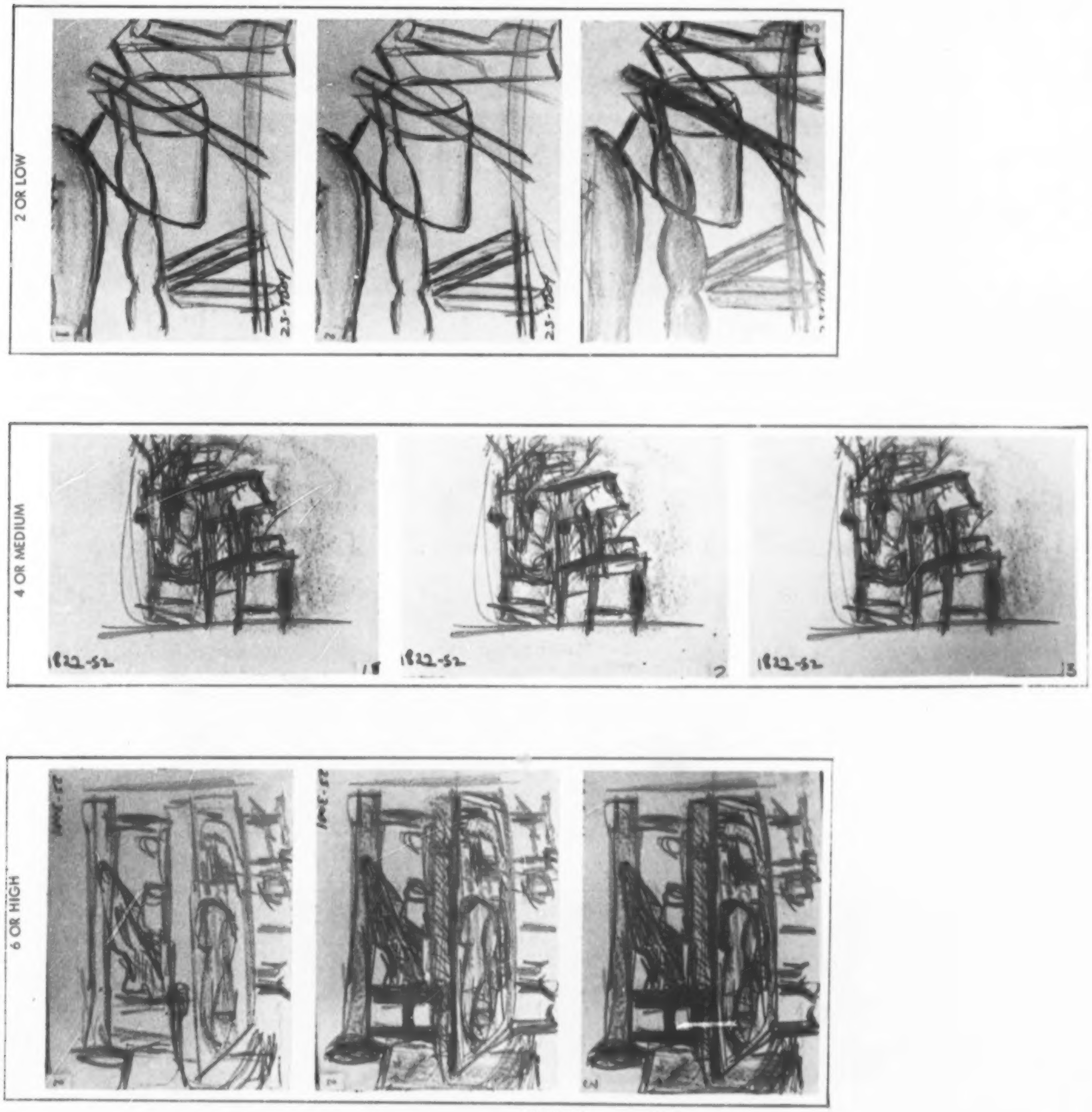


FIGURE 8

PRODUCT SCALE FOR SPONTANEOUS STRATEGY--STILL-LIFE DRAWING

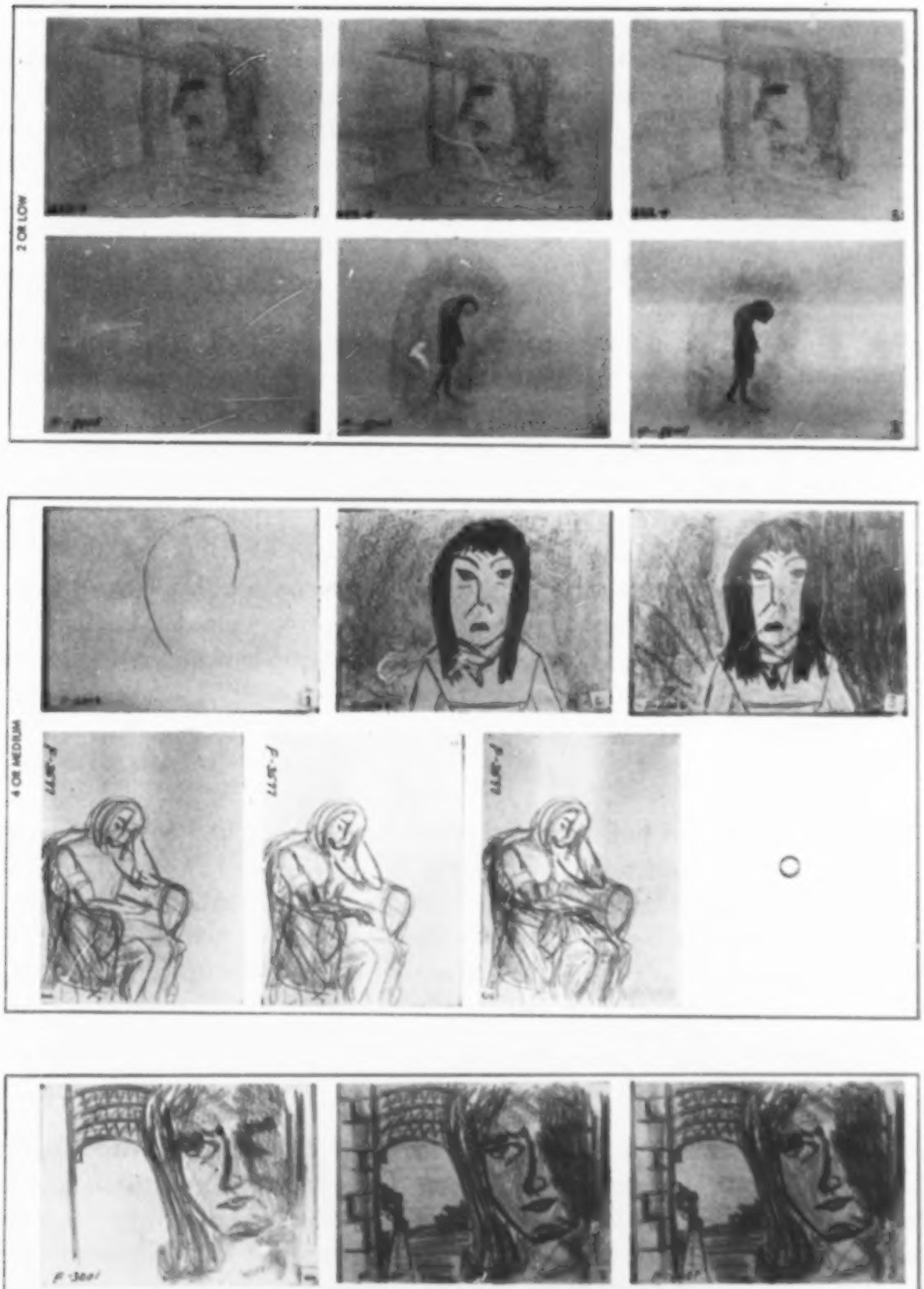


FIGURE 9

PRODUCT SCALE FOR SPONTANEOUS STRATEGY—FIGURE DRAWING to exchange their views in the interpretation of the definitions of the criteria and the product scale in the hope of arriving at a clearer understanding of their meaning in relationship to the judges' own personal biases and sets of standards. The training session meant involving the judge experts in a series of judging exercises or trial briefing period using a separate group of drawings, namely, those eliminated from the analysis, in order to obtain a more common denominator.

Specific aspects of the judging

The mechanics of judging the drawings for the three criteria were similar for the still-lifes and for the figures. The judges were provided with the product-scale and the definition of the criteria with which they had already become familiar. Independent evaluations of the drawings were made by each judge from the randomly mixed drawings of the pre-and post-tests. After placing the product scale in front of him, and as a first step, each judge tried to match the drawings to be judged into 1 of 3 categories (low, medium or high) without regard to distribution frequency. The second step of the procedure was to re-evaluate each of the three categories forming seven divisions related to the product scale. After each judge had completed his evaluations the scores were recorded and the drawings were randomized again thus preparing them for the next judge.

Reliability of art judges

The experience and readings of the writer have led him to discover that judge-reliability, in a number of studies on art education, have been tested by two different kinds of statistical techniques: a correlation technique and an analysis of variance technique. In view of the belief that judge-reliability is a critical element in any empirical research the following section has been devoted to analyzing the reliability of the judges by using each of these two techniques and comparing the two.

Correlation technique

A "Symmetric Correlation Program, Floating Input"[1] was used by processing the data at the Computation Center of the University. For each of the three judged criteria the score of each of the judges and the score of the total of the judges was used to compute the correlation coefficients of all possible pairs of variables. The resulting correlations are shown in Tables 4 to 9. Inspection of these tables show that in all cases the correlations are significant beyond the .01 level and that the judgments made for each of the three criteria could therefore be considered reliable.

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[1] Roberts and Wink, op. cit.

TABLE 4

CORRELATION AMONG JUDGES FOR ORIGINAL-AESTHETIC QUALITY, STILL-LIFE DRAWINGS OF PRE-TESTS AND POST-TESTS

Judge	A	B	C	D
A				
B	.584			
C	.671	.638		
D	.694	.575	.606	
Total	.873	.814	.827	.834

N - 260 $r_{.01}$ level = .163

TABLE 5

CORRELATION AMONG JUDGES FOR ORIGINAL-AESTHETIC QUALITY, FIGURE DRAWINGS OF PRE-TESTS AND POST-TESTS

Judge	A	B	C	D
A				
B	.576			
C	.609	.719		
D	.714	.679	.762	
Total	.841	.847	.890	.901

N = 156 $r_{.01}$ level - 207

TABLE 6

CORRELATION AMONG JUDGES FOR DIVERGENT ART STRATEGY, STILL-LIFE DRAWINGS OF PRE-TESTS AND POST-TESTS

Judge	A	B	C
A			
B	.406		
C	.406	.613	
Total	.776	.821	.819

N = 208 $r_{.01}$ level = .179

TABLE 7

CORRELATION AMONG JUDGES FOR DIVERGENT ART STRATEGY, FIGURE DRAWINGS OF PRE-TESTS AND POST-TESTS

Judge	A	B	C
A			
B	.412		
C	.316	.499	
Total	.739	.816	.779

N = 104 $r_{.01}$ level = .252

TABLE 8

CORRELATION AMONG JUDGES FOR SPONTANEOUS ART STRATEGY, STILL-LIFE DRAWINGS OF PRE-TESTS AND POST-TESTS

Judge	A	B	C
A			
B	.540		
C	.481	.470	
Total	.804	.810	.828

N = 208 $^{r}.01$ level = .179

TABLE 9

CORRELATION AMONG JUDGES FOR SPONTANEOUS ART STRATEGY, FIGURE DRAWINGS OF PRE-TESTS AND POST-TESTS

Judge	A	B	C
A			
B	.363		
C	.607	.316	
Total	.860	.665	.830

N = 104 $^{r}.01$ level = .252

The reliability for Original-Aesthetic Quality ranged from .575 to .762 when comparing each judge with every other judge and it ranged from .827 to .901 when comparing each judge with the total of the judges. The pattern of correlation coefficients seemed similar for both the still-life drawings and the figure drawings.

The reliability for Divergent Strategy and Spontaneous Strategy showed similar patterns for the two kinds of drawings, ranging from .316 to .613 when comparing each judge with every other judge and .665 to .830 when comparing each judge with the total of the judges.

It is interesting to note that the reliability for Original-Aesthetic Quality was higher than that for either Divergent or Spontaneous Strategy, thus contradicting some of the previous studies with respect to these criteria.

Analysis of variance technique

An analysis of variance technique was also used to measure the reliability of the judges. The data consisted of the scores of each of the judges for the three criteria and was processed through the IBM Computer using the analysis of variance program written by Richard Craig.[1] The resulting analysis of variance table included: (1) variation due to product (S_a^2), (2) variation due to judge (S_b^2), and (3) variation due to chance error (S_e^2). These three terms were then substituted in the reliability formulae for scores based on one judge and for mean score based on all judges. An example of the statistical technique is shown in Appendix C, page 144 to page 145, and may be followed in detail. The statistical technique used resulted in a coefficient of reliability usually ranging from zero to plus one. A value of plus one indicates perfect reliability; a value of zero indicates no reliability.

Statistical analyses were made to test the reliability for the three judged criteria and the results are shown in Table 10. Through inspection it may be seen that the reliability coefficients based on one judge and on all judges are generally high--ranging from .384 to .856 and from .565 to .881 respectively. As in the case of the correlation technique the highest reliability coefficients were those based on Original-Aesthetic Quality. The lowest reliability was for the still-lifes based on the spontaneous criteria. All coefficients were regarded as moderate to very high.

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[1] Richard Craig, "Analysis of Variance," 11.5.002. Revised. Computation Center, The Pennsylvania State University, University Park, Pennsylvania, May 1963. (Mimeographed.)

TABLE 10

RELIABILITY COEFFICIENTS OF JUDGED CRITERIA OF ART PRODUCTS USING ANALYSIS OF VARIANCE TECHNIQUE

Name of Performance Tests	Criteria Judged*	Number of Products (r)	Number of Judges (k)	Reliability Coefficient Based on One Judge	Reliability Coefficient Based on All Judges
Still-Life	O-A	260	4	.801	.849
Figure	O-A	156	4	.856	.881
Still-Life	D	208	3	.707	.718
Figure	D	104	3	.667	.673
Still-Life	S	208	3	.384	.565
Figure	S	104	3	.548	.641

*O-A: Original-Aesthetic Quality
D: Divergent Strategy
S: Spontaneous Strategy

Comparison between the two statistical techniques

Comparison between the correlation method and the analysis of variance method of testing the reliability of the judged criteria seems to indicate that the results are fairly similar regardless of the method used. Nevertheless, the researcher feels that the analysis of variance method is more accurate inasmuch as it includes not only the relationship among judges but also that based on product and chance.

The extensive analysis of the reliability of judgments based on certain criteria was done in order to assure that the data resulting from it and used for further analysis would be considered valid. The writer feels that the discussion just completed establishes a sound and valid basis for accepting the data and proceeding to further analysis.

Reliability of judges based on best art performance of treatment period

It will be recalled that the "best" art performance of each student for the treatment period was selected for analysis. This work was first judged for Original-Aesthetic Quality and then submitted to statistical treatment using the correlation technique in order to determine the reliability of the judgments made on that criteria. Procedures similar to those previously described for the evaluations of the drawing of the pre-tests and post-tests were used. A product scale was again selected and used as a yardstick. The scores of the judges were submitted to treatment by using the symmetric correlation program already described. The results are shown in Table 11 and indicate that all correlations are significant beyond the .01 level and the judgments were therefore accepted for further analysis.

It should be noted that the art work selected in this case was done during the experiment under normal classroom conditions. It consisted of a variety of subjects and media. When discussing possible results based on this kind of judgment both the judges and the researcher had doubts as to the outcome of the judge reliability. Nevertheless reliability was considerably high although not quite as high as during pre-post-test judgments.

2

TABLE 11

CORRELATION AMONG JUDGES FOR ORIGINAL-AESTHETIC QUALITY BASED ON BEST ART PERFORMANCE OF TREATMENT PERIODS

Judge	A	B	C	D
A				
B	.429			
C	.469	.683		
D	.627	.664	.704	
Total	.755	.831	.864	.888

N = 52 $r_{.01}$ level = .355

CHAPTER III

ANALYSIS OF DATA AND FINDINGS

This chapter contains information related to (1) analysis of differences between pre-tests and post-tests, (2) analysis of best art work of treatment period, (3) correlation analysis of all tests, (4) descriptive observations of the art programs, and (5) descriptive observations of the teaching methods.

I. ANALYSIS OF DIFFERENCES BETWEEN PRE-TESTS AND POST-TESTS

Description of variables

The data used in the analysis of differences between the pre-tests and the post-tests consisted of the following fifteen variables:

Variable	Criteria Judged	Test	Code
1	Original-Aesthetic Quality	Still-life 1	OA-S1
2	Original-Aesthetic Quality	Still-life 2	OA-S2
3	Original-Aesthetic Quality	Figure	OA-F
4	Divergent Art Strategy	Still-life 1	D-S_1
5	Divergent Art Strategy	Still-life 2	D-S_2
6	Divergent Art Strategy	Figure	D-F
7	Spontaneous Art Strategy	Still-life 1	S-S1
8	Spontaneous Art Strategy	Still-life 2	S-S2
9	Spontaneous Art Strategy	Figure	S-F
10	Abstract	FAT	FAT-Abs.
11	Flexibility	FAT	FAT-Flex.
12	Aesthetic	ISSD-63	ISSD
13	Social Self-Determination	ISSD-63	ISSD
14	Complexity	ISSD-63	ISSD
15	Theoretical	ISSD-63	ISSD

Only differences between pre and post tests were used as data in this analysis. In the case of the art tests those differences were obtained from the total of the scores of each judge team for each criteria.

Analysis of variance technique

Through the services of the Computation Center of the University a two factor analysis of variance program was used to compute the differences between the four groups for the fifteen variables.[1] This program is designed to handle any two factor analysis of variance problem with equal or unequal sub-class frequencies. The general least square procedure for fitting constants is used and the interaction is tested. For each variable, the output consists of the preliminary analysis of variance table and completed analysis of variance table with source of variation, degrees of freedom, sums of squares, mean squares, and F-ratios. In addition, total uncorrected sums of squares, correction term, i.e., total reduction in sums of squares, and standard deviation are given. A summary table is printed which consists of the number of observations, totals, means and standard errors at every level; significance of the F-ratio is also provided. The two factors of the analysis of variance were content (prescribed or self-developed) and method (divergent or spontaneous).

Analysis of art performances

One part of the resulting analysis of variance provided the necessary data to evaluate the differences with respect to the three criteria of the three art performances.

It seemed however as the first step in the analysis should be to take an overall look at the data in terms of the means of the four groups. Tables 12, 13 and 14 show the mean of differences and the standard error of mean differences for the nine art-test variables as abstracted from the analysis of variance data. It will be noticed that the range between the means for the four groups is from 2.746 to -3.445 for Original-Aesthetic Quality, from .888 to -1.95 for Divergent Strategy and from 1.698 to -2.015 for Spontaneous Strategy. The biggest differences seem to be with respect to Original-Aesthetic Quality while Divergent and Spontaneous Strategies are more or less holding their own. In general none of the four groups gained much for either of the three criteria. The tendency seems to be to do little more than maintain a status quo.

Of the nine art variables, four showed some kind of significant F-ratio and the others did not. Table 15 shows those variables with significant F-ratios and Figures 10-14 help to visualize the direction between the factors.

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[1] Flora Chow, "Two Factor Analysis of Variance," ANOV 2, 11.5.015. Computation Center, The Pennsylvania State University, February, 1964. (Mimeographed.)

TABLE 12

MEAN OF DIFFERENCES ($\overline{D}$) AND STANDARD ERROR OF MEAN DIFFERENCES ($S_{\overline{D}}$) BETWEEN PRE-PERFORMANCE TESTS AND POST-PERFORMANCE TESTS AS JUDGED FOR ORIGINAL-AESTHETIC QUALITY

Test		Prescribed Course of Study		Self-Developed Course of Study	
		Spontaneous Strategy (N=09) A	Divergent Strategy (N=14) B	Spontaneous Strategy (N=15) C	Divergent Strategy (N=14) D
Still-life 1*	$\overline{D}$	-3.445	-0.785	-1.733	0.928
	$S_{\overline{D}}$	1.581	1.404	1.348	1.404
Still-life 2*	$\overline{D}$	0.247	-2.698	2.148	-0.302
	$S_{\overline{D}}$	1.318	1.171	1.124	1.171
Figure	$\overline{D}$	1.507	2.746	0.229	1.468
	$S_{\overline{D}}$	1.296	1.151	1.105	1.151

*These variables are further analyzed in Table 15 and Figures 11-15.

TABLE 13

MEAN OF DIFFERENCES ($\bar{D}$) AND STANDARD ERROR OF MEAN DIFFERENCES ($S_{\bar{D}}$) BETWEEN PRE-PERFORMANCE TESTS AND POST-PERFORMANCE TESTS AS JUDGED FOR DIVERGENT STRATEGY

		Prescribed Course of Study		Self-Developed Course of Study	
Test		Spontaneous Strategy (N=09) A	Divergent Strategy (N=14) B	Spontaneous Strategy (N=15) C	Divergent Strategy (N=14) D
Still-life 1*	$\bar{D}$	-1.952	-1.102	0.038	0.888
	$S_{\bar{D}}$	1.136	1.010	0.969	1.010
Still-life 2	$\bar{D}$	0.231	-1.148	-0.472	-1.851
	$S_{\bar{D}}$	0.976	0.867	0.832	0.867
Figure	$\bar{D}$	-1.361	-0.982	-0.183	0.196
	$S_{\bar{D}}$	1.132	-1.007	0.965	1.006

*This variable is further analyzed in Table 15 and Figure 14 .

TABLE 14

MEAN OF DIFFERENCES ($\bar{D}$) AND STANDARD ERROR OF MEAN DIFFERENCES ($S_{\bar{D}}$) BETWEEN PRE-PERFORMANCE TESTS AND POST-PERFORMANCE TESTS AS JUDGED FOR SPONTANEOUS STRATEGY

		Prescribed Course of Study		Self-Developed Course of Study	
Test		Spontaneous Strategy (N=09) A	Divergent Strategy (N=14) B	Spontaneous Strategy (N=15) C	Divergent Strategy (N=14) D
Still-life 1*	$\bar{D}$	1.025	1.698	-2.015	-1.341
	$S_{\bar{D}}$	0.977	0.868	0.833	0.868
Still-life 2	$\bar{D}$	0.134	0.485	0.520	0.872
	$S_{\bar{D}}$	0.889	0.790	0.759	0.790
Figure	$\bar{D}$	0.774	0.217	0.269	-0.288
	$S_{\bar{D}}$	1.200	1.066	1.023	1.066

This variable is further analyzed in Table 15 and Figure 15.

TABLE 15

ANALYSIS OF VARIANCE FOR ART TEST VARIABLES WITH SIGNIFICANT F-RATIOS

Variable	Source of Variation	Degrees of Freedom	Sum of Squares	Mean of Squares	F-Ratio	Probability	Direction
OA-S1	A(Strategy)	1	90.036	90.036	2.616	.10 (-)	Divergent (B+D)>Spontaneous (A+C)*
	B(Content)	1	37.041	37.041	1.076		
	Error	49	1686.441	34.417			
OA-S2	A(Strategy)	1	103.315	103.315	4.703	.05	Spontaneous (A+C)>Divergent (B+D)
	B(Content)	1	52.956	52.956	2.411	.10 (-)	Self-Developed (C+D)>Prescribed (A+B)
	Interaction	1	118.540	118.540	5.40	.025	C>A>D>B
	Residual	48	1054.480	21.969			
Div. S1	A(Strategy)	1	9.189	9.189	0.517		
	B(Content)	1	50.001	50.001	2.811	.10	Self-Developed (C+D)>Prescribed (A+B)
	Error	49	871.636	17.789			
Spont. S1	A(Strategy)	1	5.772	5.772	0.440		
	B(Content)	1	116.645	116.645	8.874	.01	Prescribed (A+B)>Self-Developed (C+D)
	Error	49	644.087	13.145			

*Letters refer to the four groups, see page 28.

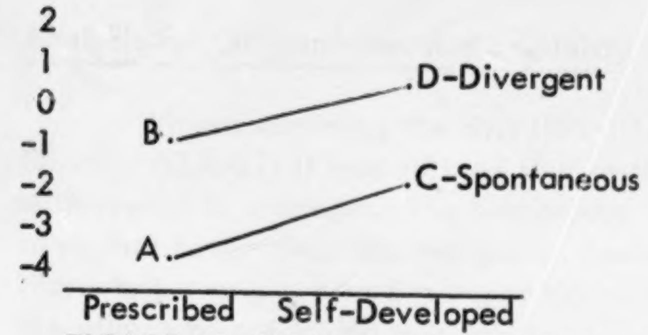

FIGURE 10: MEANS FOR STRATEGY LEVEL AT EACH CONTENT LEVEL - OA-S1

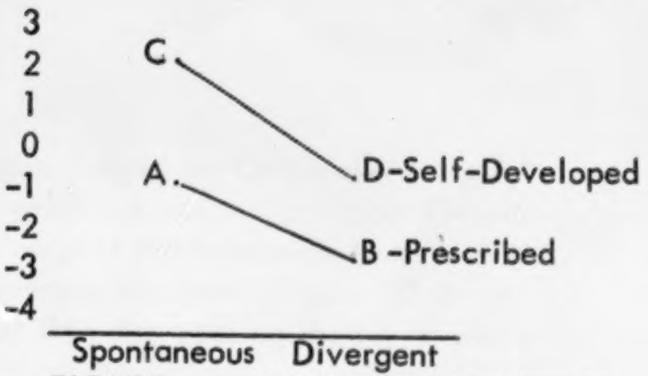

FIGURE 11: MEANS FOR CONTENT LEVEL AT EACH STRATEGY LEVEL - OA-S1

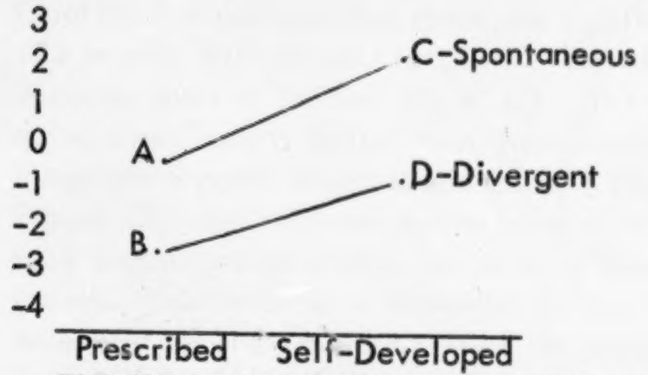

FIGURE 12: MEANS FOR STRATEGY LEVEL AT EACH CONTENT LEVEL - OA-S2

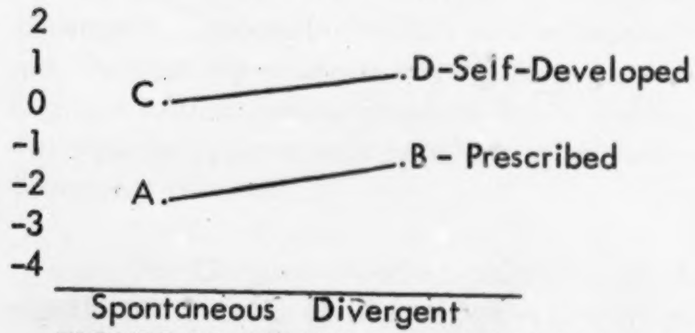

FIGURE 13: MEANS FOR CONTENT LEVEL AT EACH STRATEGY LEVEL - D-S1

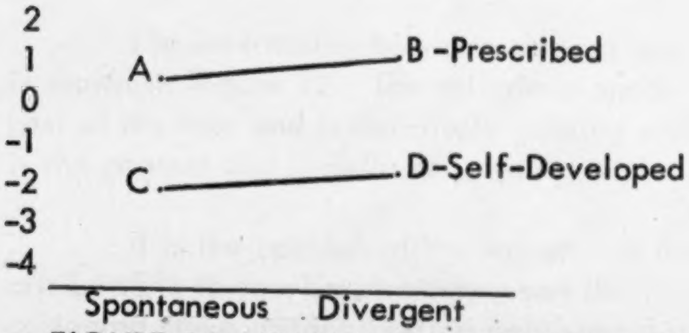

FIGURE 14: MEANS FOR CONTENT LEVEL AT EACH STRATEGY LEVEL - S-S1

Analysis for Original-Aesthetic Quality

When examining the first still-life drawing as judged for Original-Aesthetic Quality (OA-S1) it was noticed that at the .10 level there was a significant F-ratio with regard to strategy. The two groups having divergent teachers seem to be doing somewhat better than the two groups having spontaneous teachers. Figure 10 shows that while two groups are not gaining much at least they are holding their own while the other two are losing.

Now when the second still-life drawing is considered for Original-Aesthetic Quality it is noticed that there are significant F-ratios with respect to strategy (at the .05 level), with respect to content (at the .10 level), and also in terms of interaction between the two (at the .05 level). The groups having spontaneous teachers are now doing significantly better than those having divergent teachers. This seems to be a complete reversal when compared with the first still-life drawing. Inspection of Figure 12 shows that the groups have almost exactly reversed. Now it is the two spontaneous groups which are holding their own while the two divergent groups are losing. This reversal is somewhat difficult to explain. However it could be that the divergent teachers have prepared the students in their groups to solve the problem they face with immediacy thus resulting in superior products on the first try, while the spontaneous teachers have apparently encouraged their students to warm-up, experiment and be more free, thus resulting in first products which are inferior to the groups having divergent teachers but which on the second try (still-life 2) reverse the trend. Also it may be that the students having divergent teachers quickly exhaust the possibilities with a given subject matter (such as the still-life) and are unable to move up from there. Perhaps the spontaneous teachers lead students more into depth approaches than the divergent teachers.

For Original-Aesthetic Quality of the second still-life drawing there is also a significant F-ratio (at the .10 level) with respect to content. Figure 12 shows that the students in the self-developed course of study are doing better than those in the prescribed course of study.

The interaction between content and method is significant at the .025 level and is shown in Figure 12. The self-developed - spontaneous teacher group is by far the best of the four and is definitely gaining while the prescribed-divergent teacher group is the poorest and is definitely losing.

It is the opinion of the writer that the significant reversal of the groups which is attributable to teacher strategy when the first and the second still-life drawings are compared make rationalization only speculative and inconclusive. Nevertheless the direction seems to be that the self-developed course of study is generally better than the one prescribed and that it is best fitted for the spontaneous teacher who gets the best results with her group. It may be that content should be closely related to teaching method when art products are judged for Original-Aesthetic Quality. This should be further examined.

It should be noticed that the Figure variable is not shown in Table 15 since the F-ratios were not significant. The range of the means for the four groups was between 2.746 and .229 (see Table 12). It will be recalled that the prescribed course of study followed by two groups was aimed at a depth approach based on the "figure." Therefore it is particularly interesting to note that although it might have been expected that those two groups would do better in the "Figure drawing test" they actually almost maintained a status quo and were no better than the two groups whose teachers developed their own course of study.

Analysis for art strategy

The following analysis for art strategy, based upon the results in Table 15 and Figures 13 and 14, show that there are only two strategy variables with significant F-ratios. They are both related to the first still-life drawing with respect to the content factor. When the Divergent Art Strategy was observed the two groups following a self-developed course of study were doing significantly better (at the .10 level) than those following a prescribed course of study. However it was interesting that they were doing better because they were holding their own while the other two groups were losing.

Now when same drawings are looked at for spontaneous strategy it is noticed that, at the .01 level, the two groups following a prescribed course of study are doing better than those following a self-developed course of study. The pattern that was seen for divergent strategy is now duplicated in reverse.

No conclusions of a definite nature may be drawn from the analysis of the art strategy variables.

It should be noticed that only the first still-life drawings had significant F-ratios. It is felt that since the second still-life and the figure drawing tests do not show any differences conclusions of a definite nature cannot be drawn from the analysis of the art-strategy variables. The direction seems to be (1) that the strategies of the teachers do not influence and affect the strategies of the students in their groups and (2) that the two groups following a self-developed course of study gained more in Divergent Strategy while the two groups following a prescribed course of study gained more in Spontaneous Strategy. This seems to make sense since Divergent Strategy and Spontaneous Strategy are at different ends of a continuum and since a gain in one direction is usually accompanied by a loss in another direction. What seems to be puzzling however is that the differences are found in relationship to the content factor of the analysis and not the strategy factor. It could very well be that the teachers who took part in this experiment were so aware of their strategies that they made a special effort not to interfere with the "natural" strategy of their students.

On the other hand it is puzzling that the strategy differences are only found to be significant with respect to one art test. What happened during the other art tests? Is the seeming instability due to the age of adolescence or is it more a sign of the search for an art strategy or style of working?

Analysis of paper and pencil tests

In order to obtain an overall picture of the four groups with respect to the two paper and pencil tests it was decided to take a look first at the differences between the means of the resulting six variables. This is done through inspection of Table 16 which shows the mean of differences and the standard error of mean differences. It is immediately noticed that for three of the four variables of the ISSD test the range of the means is almost null (from .709 to -.564). In other words the students have neither gained nor lost. There is some range of means for the other three variables, namely, from 2.153 to 4.241 for FAT-Abstract, from -.698 to 2.337 for FAT-Flexibility, and from -.365 to 1.551 for ISSD-Social Self-Determination. In all three variables the two groups with divergent teachers are doing better with the group having a self-developed course of study having a slight lead. Differences seem to be attributable to gain.

The analysis of variance for the paper and pencil tests shows that two of the six variables have significant F-ratios. They are reproduced in Table 17 and are visualized graphically in Figure 15. It is noticed that FAT-Flexibility has a significant F-ratio at the .10 level with respect to strategy. In other words, the two groups having divergent teachers seem to be doing better than those having spontaneous teachers. The two groups are gaining somewhat while the other two are losing. The second significant F-ratio is at the .01 level, is observed for ISSD-Social Self-Determination. The strategy again affects the differences and moreover affects it in the same direction--the two groups with divergent teachers doing better than those with spontaneous teachers.

It may be summarized that the divergent teachers are having a positive effect on the Flexibility and Social Self-Determination of the students in their groups, while the opposite is true for the spontaneous teachers.

II. ANALYSIS OF BEST ART WORK OF TREATMENT PERIOD

The best art work done by each student during the nine-week treatment period was selected to determine the differences between the four groups with respect to Original-Aesthetic Quality. It was felt that since the groups were alike and matched for that criteria with respect to the art performances of the pre-tests it would be possible

TABLE 16

MEAN OF DIFFERENCES ($\bar{D}$) AND STANDARD ERROR OF MEAN DIFFERENCES ($S_{\bar{D}}$) BETWEEN PRE-TEST AND POST-TEST FOR THE F.A.T. AND THE I.S.S.D.-63

		Prescribed Course of Study		Self-Developed Course of Study	
		Spontaneous Strategy (N=09) A	Divergent Strategy (N=14) B	Spontaneous Strategy (N=15) C	Divergent Strategy (N=14) D
F.A.T. Abstract	$\bar{D}$	2.153	3.687	2.708	4.241
	$S_{\bar{D}}$	1.254	1.114	1.069	1.114
F.A.T. Flexibility	$\bar{D}$	-0.698	1.020	0.619	2.337
	$S_{\bar{D}}$	0.991	0.880	0.845	0.880
I.S.S.D.	$\bar{D}$	0.858	0.305	0.818	0.266
Aesthetic	$S_{\bar{D}}$	0.551	0.490	0.470	0.490
I.S.S.S.	$\bar{D}$	-0.365	1.234	-0.048	1.551
Social Self-Determination	$S_{\bar{D}}$	0.582	0.517	0.496	0.517
I.S.S.D.	$\bar{D}$	-0.564	0.006	0.139	0.709
Complexity	$S_{\bar{D}}$	0.512	0.455	0.436	0.455
I.S.S.D.	$\bar{D}$	-0.313	-0.145	0.416	0.584
Theoretical	$S_{\bar{D}}$	0.523	0.446	0.465	0.465

TABLE 17

ANALYSIS OF VARIANCE FOR PAPER AND PENCIL TESTS WITH SIGNIFICANT F-RATIOS

Variable	Source of Variation	Degrees of Freedom	Sum of Squares	Mean of Squares	F-Ratio	Probability	Direction
F.A.T. - Flexibility	A(Strategy)	1	37.550	37.550	2.776	.10	Divergent (B+D)>Spontaneous (A+C)*
	B(Content)	1	21.892	21.892	1.618		
	Error	48	662.840	13.527			
I.S.S.D. - Social Self-Determination	A(Strategy)	1	32.527	32.527	6.968	.01	Divergent (B+D)>Spontaneous (A+C)
	B(Content)	1	1.267	1.267	0.271		
	Error	48	228.745	4.669			

*Letters refer to the four groups, see page 28 .

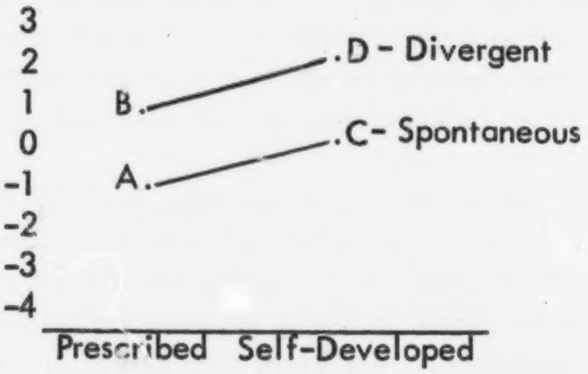

FIGURE 15: MEANS FOR STRATEGY LEVEL AT EACH CONTENT LEVEL - F.A.T. - FLEX.

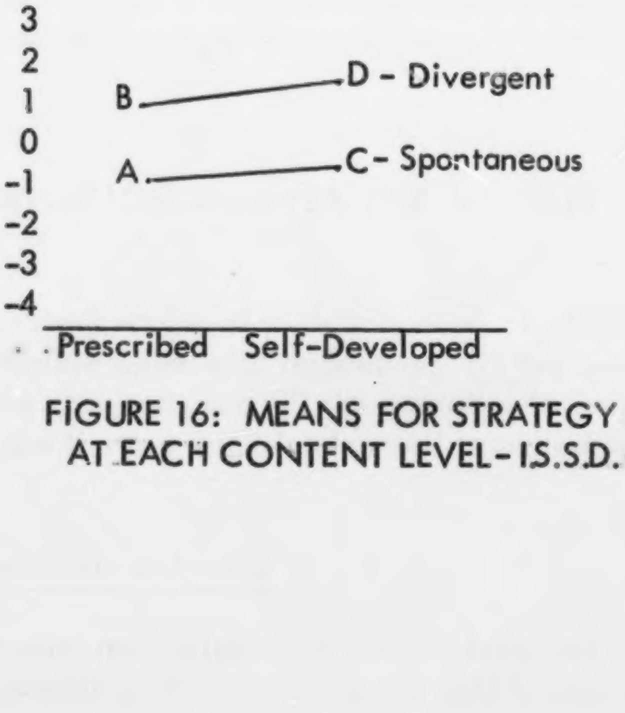

FIGURE 16: MEANS FOR STRATEGY LEVEL AT EACH CONTENT LEVEL - I.S.S.D. - S. SELF.

to test any differences which might exist among the groups for the best work done. The rationale for the selection of the best work of each student was based on the belief that in art, unlike some other area, the quality of the student's performance should perhaps be based on his best work rather than the average of his work and also that the best work may very well be produced at any time during the course of an experiment such as this.

The sum of the scores of the judges for that criteria was used as the data for analysis. Using the resources of the IBM Computation Center the data was processed by that statistical technique previously described which measures "Differences Between Means, Non-Correlated Samples of Unequal Size."[1] Table 18 which shows the resulting t-values between the means, indicates that there are no differences between the groups based on Original-Aesthetic Quality. It may therefore be summarized that even at the .10 level of significance the four groups are alike.

In order to determine at what point the groups are alike the means and standard error of the means for the best art work of the treatment period were abstracted from the previous analysis. It will be recalled that the data used to compute the means was based on the sum of the scores of four judges using a seven point scale. In other words, a mean score of 16 would be interpreted as medium--4 or medium x 4 judges. Inspection of Table 19 shows that the four groups are not only performing very much alike but are doing average or medium work when judged for Original-Aesthetic Quality.

III. CORRELATION ANALYSIS FOR ALL TESTS

In view of the exploratory nature of study a number of subordinate problems were tested in order to provide possible clues with respect to: (1) the overall relationship between the pre-tests and the post-tests and (2) the overall relationship between the three art performance tests and the two paper and pencil tests during the pre-tests and during the post-tests.

Relationship between pre-tests and post-tests

The relationship between the variables of the pre-tests and the post-tests was measured by a Symmetric Correlation Program using the IBM Computer.

Table 20 shows the correlation coefficients for the art tests and Table 21 shows the means and the standard error of the means for those variables. Inspection of the two tables shows that there is a close relationship between the pre and post-tests. All the correlations except one are significant at the .05 and .01 level. Moreover when

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[1] A. T. Wink, op. cit.

TABLE 18

T-VALUES FOR DIFFERENCE BETWEEN MEANS FOR THE PRE-TESTS OF THE THREE JUDGED ART CRITERIA OF THE FOUR GROUPS OF THE EXPERIMENT

Group*	t-Value between Means Original-Aesthetic Quality	Divergent Art Strategy	Spontaneous Art Strategy	Degrees of Freedom	t-Value at .10 Level
A-B	0.145	0.187	0.921	30	1.70
A-C	0.320	0.944	1.240	19	1.73
A-D	0.889	0.073	0.702	19	1.73
B-C	0.516	0.758	0.365	31	1.70
B-D	1.135	0.268	0.299	31	1.70
C-D	0.168	1.057	0.671	30	1.70

*Group A: Prescribed Course of Study, Spontaneous Teacher
B: Prescribed Course of Study, Divergent Teacher
C: Self-Developed Course of Study, Spontaneous Teacher
D: Self-Developed Course of Study, Divergent Teacher

TABLE 19

MEAN ($\bar{X}$) AND STANDARD ERROR OF MEAN ($S_{\bar{X}}$) FOR THE BEST ART WORK OF THE TREATMENT PERIOD

	Prescribed Course of Study		Self-Developed Course of Study	
	Spontaneous Strategy Group A	Divergent Strategy Group B	Spontaneous Strategy Group C	Divergent Strategy Group D
$\bar{X}$	18.222	15.214	15.533	15.929
$S_{\bar{X}}$	4.910	3.321	1.805	1.789
N	09	14	15	14

TABLE 20

PRE-POST CORRELATIONS FOR THE THREE ART PERFORMANCES

Original-Aesthetic Quality	Still-life 1	=	.690
Original-Aesthetic Quality	Still-life 2	=	.466
Original-Aesthetic Quality	Figure	=	.641
Divergent Art Strategy	Still-life 1	=	.346
Divergent Art Strategy	Still-life 2	=	.513
Divergent Art Strategy	Figure	=	.292
Spontaneous Art Strategy	Still-life 1	=	.182
Spontaneous Art Strategy	Still-life 2	=	.539
Spontaneous Art Strategy	Figure	=	.370

N = 52

.01 level = .354
.05 level = .272

TABLE 21

MEANS $(\bar{X})$ AND STANDARD ERROR OF MEANS $(S_{\bar{X}})$ FOR THE THREE ART PERFORMANCES OF THE PRE-TESTS AND THE POST-TESTS

Variable*	Pre-Tests		Post-Tests	
	$\bar{X}$	$S_{\bar{X}}$	$\bar{X}$	$S_{\bar{X}}$
OA-S1	11.712	6.143	11.385	5.255
OA-S2	10.692	5.745	11.923	5.520
OA-F	12.577	5.165	14.038	6.036
D-S1	10.712	3.550	10.327	3.889
D-S2	11.058	3.847	10.154	3.472
D-F	11.923	3.508	11.423	3.483
S-S1	8.173	3.179	7.846	2.893
S-S2	8.481	3.776	9.019	2.682
S-F	9.635	4.149	9.885	3.590

*For description of variables, see page 52.

examining the means it is seen that they are almost the same for pre and post tests. It seems that when the treatments of the groups are not considered there is a definite lull or status-quo.

Table 22 shows the correlation coefficients for the paper and pencil tests and Table 23 shows the means and standard error of the means for those variables. By inspecting two tables it may be seen that the pre-post correlations are very highly significant and that the means between the two are almost identical leading to the conclusion that no change is taking place.

What may be summarized and concluded from the correlation analysis of the pre-tests and post-tests? It seems that the overall patterns indicates little or no change in the pre-post tests administered to the students. Whatever little differences were found for some of the variables in the analysis of variance (which considers the two treatments as factors) now disappears and indicates again that there is no movement either upon down--this sameness seems to continue to reinforce a possible "status quo theory" for that age level.

Relationship between art performances and paper and pencil tests

An analysis was made to determine the relationship between the art performance tests and the paper and pencil tests as seen at the beginning and at the end of the experiment in order to determine the extent of which the FAT and the ISSD-63 can be used to predict either the Original-Aesthetic Quality or the Art Strategy of art performances. The data was processed at the Computation Center and a symmetric correlation program was again used. Tables 24 and 25 show the results of this analysis for the pre-tests and the post-tests respectively. In view of the apparent connection between the findings of the pre-tests and the post-tests which may give additional significance and meaning to any possible conclusions it was felt that the two should be discussed together.

The first overall inspection of the two tables indicates that while most of the correlations between the art tests and the paper and pencil tests are not significant there are a few which are significant at the .05 and .01 level and that all but two of those are found in the pre-tests. In general the distribution of the correlations form a scattered pattern.

Original-Aesthetic Quality. When inspecting the pre-tests it is seen that two of the three art performances when judged for Original-Aesthetic Quality correlate with FAT-Flexibility at the .01 level. Those two art tests are OA-S1 (.403) and OA-F (.341). Why the second still-life drawing (OA-S2) does not show significant correlation with Flexibility is difficult to explain. It indicates a lack of consistency in the three art performances for that criteria and in the opinion of the writer is fairly logical since it reflects the general nature of the art process which is so speculative as to demand a trial and error orientation--success in art probably needs to be accompanied by failure.

TABLE 22

PRE-POST CORRELATIONS FOR THE PAPER AND PENCIL TESTS

F.A.T. -	Flexibility	=	.658
I.S.S.D.-	Aesthetic	=	.786
I.S.S.D.-	Social Self-Determination	=	.446
I.S.S.D.-	Complexity	=	.649
I.S.S.D.-	Theoretical	=	.701

N = 52 .01 level = .354

TABLE 23

MEANS ($\bar{X}$) AND STANDARD ERROR OF MEANS ($S_{\bar{X}}$) FOR THE THREE ART PERFORMANCES OF THE PRE-TESTS AND THE POST-TESTS

Variables	Pre-Tests $\bar{X}$	Pre-Tests $S_{\bar{X}}$	Post-Tests $\bar{X}$	Post-Tests $S_{\bar{X}}$
F.A.T. - Flexibility	19.923	4.467	20.885	4.588
I.S.S.D - Aesthetic	7.808	2.977	8.346	3.180
I.S.S.D. - Social Self-Determination	6.154	1.742	6.865	2.450
I.S.S.D. - Complexity	6.154	1.974	6.288	2.460
I.S.S.D. - Theoretical	6.173	2.511	6.346	2.496

TABLE 24

INTERCORRELATIONS OF THE THREE ART PERFORMANCE TESTS AND THE TWO PAPER AND PENCIL TESTS--PRE-TESTS ONLY

Art Tests	F.A.T. Flexibility	I.S.S.D.. Aesthetic	I.S.S.D. - Social Self-Determination	I.S.S.D. Complexity	I.S.S.D. Theoretical
OA-S1	.403 *	.024	.012	.156	.043
OA-S2	.192	.118	.122	.072	.073
OA-F	.341*	.208	.086	.243**	.172
D-S1	.010	.299**	-.196	-.100	-.111
D-S2	.074	.415*	.095	.009	.172
D-F	.016	.143	.002	-.041	.057
S-S1	.187	-.003	.130	.230	.286**
S-S2	.202	-.279**	.090	.085	.043
S-F	.295**	.167	.192	.203	.129

TABLE 25

INTERCORRELATIONS OF THE THREE ART PERFORMANCE TESTS AND THE TWO PAPER AND PENCIL TESTS--POST TESTS ONLY

Art Tests	F.A.T. Flexibility	I.S.S.D. Aesthetic	I.S.S.D. - Social Self-Determination	I.S.S.D. Complexity	I.S.S.D. Theoretical
OA-S1	.156	.112	-.090	.016	.003
OA-S2	-.028	.091	-.108	.001	-.163
OA-F	.133	.137	.037	.274**	.039
D-S1	.001	.119	-.129	-.151	-.097
D-S2	.119	.087	-.187	-.150	.023
D-F	.101	.339*	-.018	.006	.123
S-S1	.002	-.162	.135	.185	.189
S-S2	-.236	-.169	.129	-.042	-.013
S-F	.067	.002	.125	.130	-.020

*.01 level = .354   N = 52
**.05 level = .272

Therefore it is clear that one art performance alone should not be used for measurement purposes but that several of them are needed in order to give a more accurate picture of that which is being measured. Nevertheless since in two of the three art performances of the pre-tests there is a moderately low positive correlation between Original-Aesthetic Quality and FAT-Flexibility it may be summarized that it could be used to predict art performance for that criteria--at least before any "treatment is applied" since the post-tests present a different picture.

Although it might have been speculated that when students have actual studio art experiences the changes which took place in the actual studio experiences which students had would be reflected in the FAT-Flexibility tests, this was not the case. Quite the contrary, it is seen that for the post-tests there is not correlation between Original-Aesthetic Quality and FAT-Flexiblity. As a matter of fact whatever correlation there was during the pre-tests disappeared completely during the post-tests. This reversal cannot be explained at this time.

With respect to Original-Aesthetic Quality one more variable needs to be discussed, it is the ISSD-Complexity test. Inspection of the two tables shows that one art performance (OA-F) comes close to significant correlation at the .05 level during the pre-test and actually reaches that level during the post-test. The other two art performances show no correlation for either pre or post tests and it is again difficult to explain why only one of the three drawings relates to ISSD-Complexity. It may be that Complexity is particularly related to the Original-Aesthetic Quality in figure drawing.

The other variables namely, ISSD-Aesthetic, Social Self-Determination and Theoretical, show no correlation at all with Original-Aesthetic Quality.

Divergent Art Strategy. The overall picture of the paper and pencil tests and Divergent Art Strategy for both pre-tests and post-tests shows that all correlations, except one, are non-significant. The significant correlation is for the ISSD-Aesthetic test. It may be seen when examining the pre-tests that both still-life drawings (D-S1 and D-S2) correlate with ISSD-Aesthetic at the .05 and .01 level respectively but that this correlation drops beyond significance for the Figure drawing (D-F). Again there seems to be a lack of consistency in performances. When the post-tests are examined the opposite seems to happen. The art performance showing significant positive correlation at the .01 level with the ISSD-Aesthetic is the figure drawing (D-F) while the other two drawings (D-S1) and (D-S2) show no correlation. Exactly why the correlations are reversed for the pre and post tests is but a guess. In any case something seems to happen which affects the relationship between the art tests as seen for Divergent Strategy and the ISSD-Aesthetic test which merits further investigation.

Spontaneous Art Strategy. In examining the relationship between the paper and pencil tests and the Spontaneous Art Strategy it is noticed that practically all the correlations are non-significant. There are only three significant correlations at the .05 level for the pre-tests and none for the post-tests.

During the pre-tests the FAT-Flexibility test correlates positively at the .05 level (.295) with the figure drawing as judged for Spontaneous Strategy (S-F) but shows practically no relation with the two still-life drawings (S-S1 and S-S2). Although here again there is a lack of consistency in art performance the direction is generally toward a very low positive correlation. During the post-tests the direction seems to be reversed showing very low negative correlation.

One of the six art performance (S-S2) correlates negatively at the .05 level with the ISSD-Aesthetic test. The meaning of this becomes a little clearer when both pre and post tests are examined. It then seems that there is a generally very low negative correlation between that test and the two still-life drawings (S-S1 and S-S2). This does not happen for the figure drawing (S-F) where there is no correlation at all.

The only other correlation which should be mentioned is between the ISSD-Theoretical test and the first still-life drawing (S-S1) which during the pre-test shows low positive significance at the .05 level but which is lost during the post-test. The other two art performances (S-S2 and S-F) show no correlation with ISSD-Theoretical. It seems again that there is a good deal of inconsistency in the art performances of the students.

It may be said in summarizing the relationships between the art performances as judged for the three criteria and the paper and pencil tests that they are inconsistent and cause for much further investigation.

IV. DESCRIPTIVE OBSERVATIONS OF THE ART PROGRAMS

In an attempt to compare the actual classroom art programs of the four groups it will be recalled that the teachers and the observers kept weekly journals to describe their activities and also that classroom observations and descriptive records were made by the researcher and an assistant. The following comparison between the groups with respect to the two kinds of art programs--self-developed and prescribed--are made with the realization that it would encompass both subjective and objective reactions. The writer feels that a fairly successful effort has been made to give a representative account of the four groups based on the descriptive information collected.

The prescribed course of study

The prescribed course of study which was assigned to a Spontaneous teacher and the Divergent teacher has already been described and is reproduced in detail in Appendix B . A summary of it is shown in Table 26. In an attempt to discover the extent to which the teachers followed or altered the prescribed program some observations were made from the collected data.

TABLE 26

SUMMARY OF PRESCRIBED COURSE OF STUDY -- SPONTANEOUS AND DIVERGENT TEACHER

	Topic	Materials	Aims	Presentation	Student Activities Out of Class
Activity I	Contour and Gesture Drawing	Pencil, conte crayon, newsprint	Understanding of two styles of drawing to increase their sensitivities to the figure	Audio-Graphic presentation: "Drawing the Human Figure"	Three contour drawings and six gesture and action drawings
Activity II	Rhythm, movement, and action	Pencil, conte crayon, graphite, sketch pads	Additional experiences with gesture and action drawings to develop individual style	Film: "Art and Motion." Also visiting a dance class	Four sketches of the human figure with a different approach or style for each
Activity III	Interpretations of the Human Figure	Pencil, graphite, pen, brushes, ink, paper	Developing individual style through a variety of media	Slides: "The Human Figure"	Group visits to galleries and 300 word personal statement on a painting
Activity IV	Fantastic Dream	Brushes, tempera paint, paper	Color as a medium of individual expression	Discussion of outside work. Slides: "Abstract Expressionists"	Interpret a poem or musical composition in a black and white medium
Activity V	Painting Self-Portraits	Pen and ink, brushes, tempera paint	Expressing the character of the self	Slides: "Self-Portraits"	Interpretational portrait of family member or friend
Activity VI	Expressing An Emotion Through The Human Figure	Tempera paint, brushes	Developing selective seeing and using art elements expressively	Audio-Graphic presentation: "Expressing Emotion Through The Human Figure	Memory drawing of an everyday event
Activity VII	A Crowd -- Preliminary Sketches	Pencils, graphite, newsprint	Introducing students to a multi-figured composition	Discussion of outside work, and slides: "A Crowd"	Visits to galleries, 300 word critical analysis of trips
Activity VIII	A Crowd -- Painting Based on Sketches	Tempera, polymer medium masonite boards	Incorporate concepts presented in other lessons into a painting which will show personal style	Same as Activity VII	Sketching something of interest to them
Activity IX	A Crowd -- (continued)	Same as Activity VIII	Same as Activity VIII	None	None

The teachers in both groups accepted the idea of following a course of study with different, yet similar, reactions. Their comments were particularly similar at the beginning of the experiment. For instance, one teacher recorded in her journal: "Before the lesson I was very apprehensive as to my ability to follow a prescribed course of study. I don't like the idea of not being able to present my own ideas, and although I followed the course of study, there were points that I perhaps understressed because they were alien to my own way of working." (Spontaneous teacher) The other one wrote: "I have a certain feeling of rebellion against lesson plans--as if it is a dictator... I don't like to depend on notes." (Divergent teacher)

The difference in the reactions of the two teachers were rather subtle. The Spontaneous teacher followed the art program although she did not particularly like the idea, in any case she was not worried about omitting parts of the outlined activities.

The Divergent teacher on the other hand, really took the prescribed program to heart and seemed to develop anxieties whenever she did not follow it with precision. She recorded comments such as: "I felt the need to refer to the outline...I need to stick more to the lesson plan and identify with the aims of lesson better." Later she adds: "My feeling was one of a problem of personalizing the lesson so that I am the teacher not a voice for a written outline." In general it seemed as if the Divergent teacher had more difficulty in adjusting to the idea of following a course of study than did the Spontaneous teacher.

With respect to the content of the program it may be said that both teachers paid particular attention to the activities with which they could identify. From the journals some specific comments have been selected to illustrate this point. The Spontaneous teacher recorded: "I have found that if I like the lesson I have little trouble in following it, it is when the lesson does not appeal to me that I supplement it to a great deal." Parallel comments were made by the Divergent teacher: "Quite often I had to leave unanswered questions drop and go on to others. I feel too directive and don't seem to use questioning properly in bringing out points." And later she adds: "It seems that in using a prescribed lesson the teacher has to think up supplementary teaching aids that suit herself...whereas if she were planning the whole lesson, she would naturally become aware of the supplementary aids during the planning."

The observations were also alike when the strategies of the teachers were affected. With respect to contour and gesture drawing the teachers seemed to prefer and stress the technique representative of their own strategies, although both gesture and contour were equally stressed in the outlined activity. The Divergent teacher wrote: "I had trouble thinking of ways to get across the idea of gesture drawing--possibly because I'm divergent." While the Spontaneous teacher wrote: "Gesture drawing was more successful (than contour) in many respects. Perhaps I put the ideas over better because I am more interested in it, but certainly I was more enthusiastic about it. This enthusiasm spread to the students, who were soon working furiously over their drawings....Contour drawing is difficult for me to do, and I also do not like it very much."

The overall attitude of both teachers may be summarized by one of their statements: "As a teacher I feel that this experience has widened my horizons and deepened my experience in art and in dealing with people. The lessons provided direction that was very valuable, and it stimulated many more ideas than I might have gotten from devising my own curriculum, simply because my experience in teaching has been very limited. Although I may not have liked the subject of a few of the lessons, I feel that all had value because it made me appreciate the possibilities of things that are either different from my own way of working or that I don't particularly like."

Although there was some variation in the attitude of the two teachers toward the course of study it may be said with relative certainty from the data of the teacher journals and also the classroom observations that the prescribed program was followed with little or no deviation. Some specifics should nevertheless be mentioned in order to give insight to the general nature of the program and the problems encountered which might either reinforce or change some of its content.

The instructional aids outlined for the teachers were found to be highly beneficial. Students enjoyed looking at the work of artists through books or slides and most of them got a lot out of it. They seemed to be really interested in knowing about their "cultural heritage." Quite often students would stop their art work and pick up an art book to examine it. Not many of them, however, actually borrowed books from one week to the next as was intended in the prescribed program. The Audio-Graphic Machine was not too popular with teachers and students. Some were not interested in it and others were torn between time spent in actual painting and in seeing a program on the Audio-Graphic. One teacher wrote in her journal: "I felt obliged to send people to use the Audio-Graphic Machine, but when it was possible to go students were absorbed in work and didn't want to go." In the opinion of the writer the lack of enthusiasm of the teacher for the Audio-Graphic was reflected in the students.

At the beginning there were some mixed feelings among the two teachers with respect to assigning out-of-class work to the students. The Divergent teacher was apprehensive about it and wrote: "I feel badly about having to assign written homework because I doubt if the students' reactions will be positive." But the students in both groups reacted remarkably well to the outside work--at least when it was in the nature of studio art. One teacher wrote: "I found that everyone who had been in class the previous week had done the sketches assigned, in fact, many had done more than was required. Several seemed anxious to show Polly and I their work, and to talk about it." This opinion was shared by both teachers and observers. Several of the prescribed out-of-class activities called for critical written statements which were received negatively. Few of them did the work; some said "this is like English class." In general it seems that students not only like out-of-class studio art work but also gain from it. Indeed this should be more seriously considered as an integral part of an art program.

Since the two teachers followed a prescribed program already prepared it was felt that they would benefit by going through their own out-of-class activities in preparation for the lesson to be taught. Both teachers reacted favorably and even enthusiastically about their assignments. Some typical comments were: "My own self-portrait helped me to understand some of the problems the students encountered, and it reviewed for the elements of painting a self-portrait." (Spontaneous teacher) "Since I had never worked with the polymer medium before, I found that the homework was especially valuable in preparation for today's lesson. It gave me an opportunity to explore and experiment with the medium." (Divergent teacher) The teachers felt that this studio work, together with the discussions which followed, helped to bring out problems that might be encountered by the students. It may very well be that more emphasis ought to be given to this aspect of preparing for a lesson.

From this discussion it may be concluded that the teachers followed the prescribed course of study with general regularity and with altering or omitting little from it. This part of the treatment of the experiment was therefore as planned.

The self-developed course of study

It will be recalled that a self-developed course of study was followed by one Divergent and one Spontaneous teacher. They kept a journal of their classroom activities similar to the ones kept by the teachers who followed a prescribed course of study. The journals were abstracted and summarized, as seen in Tables 27 and 28, and together with the classroom observations made by the writer formed the basis for the following discussion.

Both teachers developed their course of study from week to week and although they had some ideas of the eventual content of their course, they both indicated that they were influenced by the interests and needs of the students in their respective groups. One teacher recorded: "The answers to the questions (asked students) will provide a basis for their viewing high quality art work and was very revealing and helpful in terms of future lessons." On another occasion a teacher discovered by talking to a student that he had a movie camera and had made some experimental films. She recorded: "Ross was bringing in two 8mm films he had made to show the class and we (teachers) encouraged all of them to bring in outside notebooks for we would enjoy seeing what type of work they do. We also asked them to bring in records to be played during the next meeting....the films interested the class and stimulated various questions and interaction among the students." Many suggestions for lessons came from student-teacher interactions. In general, it was clear that the teachers in both groups were very perceptive to the needs of the students and took advantage of many of their suggestions in order to help meet their interests and needs. The students seemed to be a part of the program planning.

TABLE 27

SUMMARY OF SELF-DEVELOPED COURSE OF STUDY -- DIVERGENT TEACHER

	Topic	Materials	Aims	Presentation
Activity I	Contour and Gesture Drawing	Pencil, conte, newsprint	Awareness of line, volume, shape, and pose of figure	Discussion of contour and gesture drawing
Activity II	Drawing and Collage	Newsprint, conte, newspaper, magazines, scrap paper, glue	Awareness of lines and shapes of figure and surrounding space	Slides: "Drawing and Paintings"
Activity III	Collage in Negative Space Using the Figure	Magazines, newspaper, tissue paper, newsprint, conte, graphite	Awareness of space surrounding the figure	Discussion centered on bulletin board
Activity IV	Figure and Still-Life	Water colors, paper	Awareness of qualities of paint	Discussion--a student showed film
Activity V	Drawing the Figure with Still-Life	Conte, graphite, pencils, newsprint	Awareness of objects and space around figure	Discussion centered around bulletin board
Activity VI	Figure and Surrounding Space	Conte, graphite, pencil, ink	Stress integration of figure and surrounding area	Illustrated books and sketching trip
Activity VII	Figure and Surrounding Space	Ink and tempera	Awareness of integrating figure and surrounding area	Books on works of art--trip to student union
Activity VIII	Self-Portraits	Collage materials, tempera, glue, crayons, pastels, mat board	Awareness of variety in expression of the self	Slides: "Self-Portraits"
Activity IX	Crowds Based on Interpretation of Poems	Collage materials, crayon, ink, tempera, paper	Unified presentation of groups in relation to environment	Books on artists--Readings on groups from literature

TABLE 28

SUMMARY OF SELF-DEVELOPED COURSE OF STUDY -- SPONTANEOUS TEACHER

	Topic	Materials	Aims	Presentation
Activity I	Figure in Motion	Brush, pen and ink	Awareness and interpretation of figure	Discussion and record - student models
Activity II	Figure and Background	Mixed black and white media	Awareness of position of figure	Quick sketches and drawings of "two fencers" in new setting
Activity III	Still-life and Imaginary Figure	Variety of collage materials,	Have student incorporate figure into a background	Discussion
Activity IV	Textures	Shoe polish, textured objects, cotton	Awareness of texture	Film on "Texture"
Activity V	Expressing Music with Color	Tempera paint	Sensitivity to color	Discussion
Activity VI	Painting A Meaningful Event	Tempera paint, colored paper	Painting from imagination to facilitate expression	Discussion of famous paintings
Activity VII	Drawing the Figure from A Model	Charcoal, pastels, colored paper	Increase perception of figure	Showing drawings and paintings on opaque projector
Activity VIII	The Figure Showing Emotional Quality	Tempera, pastels, ink, water color paper	Relate emotion and color to the figure	Discussion centered on students' previous work
Activity IX	Ink Experiments	White paper, ink, paint, pastels, straws	Have students consider the whole page and design	Demonstration and discussion

By comparison the teachers who followed a prescribed course of study did not consult with students about possible class activites. It is true that they were asked to follow the course of study, but nevertheless they were permitted to enrich and supplement it. All additions to the activities came from the teachers and not the students.

In inspecting Tables 27 and 28 it is noticed that there is a good deal of similarity between them. For instance:

1. Six and eight lessons for each group respectively (out of nine) were concerned with the human figure.

2. The two-dimensional media used for both groups were alike and included brush, pen and ink, tempera and water color paints, and collages.

3. Most of the presentations included some kind of instructional aid such as art books, slides, or films which were used as a spring board for class discussions. The presentations however were loosely structured and made use of on-the-spot improvisations.

It may fairly safely be said that, although the self-developed course were developed and taught by two teachers who supposedly were to be of different strategy there was little difference in their art programs. And although the two teachers made up their program from week to week the patterns of both showed a fairly sequential development with respect to the media used and the emphasis on the human figure. Moreover it is interesting to note that the art content of the self-developed and prescribed courses of study were very much alike. In retrospect this is attributed to the fact that the teachers selected for this experiment were affected by the climate and philosophy which prevailed among some faculty members of the Art Education Department of the University. Apparently the teachers, who were also college students in their third year, responded favorably to the depth approach to teaching and reflected it in their art programs.

CHAPTER IV

SUMMARY, CONCLUSIONS AND IMPLICATIONS

I. RESTATEMENT OF THE PROBLEM

The present study was designed to study the effects and interrelationships of what is taught--content, and how it is taught--method as measured in the change revealed in the art products of adolescents. It had the following general objectives:

1. To compare the effect of two art programs (self-developed and prescribed) as measured by the quality of the art products of students.

2. To compare the effect of two methods of teaching (the one Spontaneous and the other Divergent) as measured by the quality of the art products of students.

Main problems

1. What are the differences, from the beginning to the end of the experiment, in the Original-Aesthetic Quality of the art performance of adolescents which are attributable to:

    a. the variation due to the content of the art program.
    b. the variation due to the method or strategy of teaching.
    c. the possible interaction between the content of the art program and the method of teaching it.

2. What are the changes which have taken place, from the beginning to the end of the experiment, in both the Divergent and the Spontaneous Art Strategies of adolescents which are attributable to:

    a. the variation due to the content of the art program.
    b. the variation due to the method of teaching.
    c. the possible interaction between content and method.

Subordinate problems

There were several subordinate problems which were related to the main hypotheses of the study. They were:

1. Can judge experts reliably measure certain established criteria based on art performances of students?
2. To what degree is it possible to predict the art performance of adolescents by the use of paper and pencil tests--the FAT and the ISSD-63?
3. What are the actual observed differences in the methods used by teachers classified as Spontaneous and those classified as Divergent?
4. What are the actual observed differences between the art content of the prescribed and the self-developed course of study?

II. SUMMARY OF PROCEDURES

Design of the study

The general design, limits and procedures of this study were, in part, determined by the nature and structure of the Children and Teen-age Art Classes of the Art Education Department of The Pennsylvania State University. The design consisted of forming four groups of teen-age students matched on the basis of Original-Aesthetic Quality, Divergent Art Strategy and Spontaneous Art Strategy as revealed in their art work.

The independent variables for each group was structured on a two-factor analysis of variance with respect to method of instruction -- Divergent or Spontaneous, and content of the art program -- Prescribed or Self-Developed.

The experiment was conducted during the Fall Term of 1964 corresponding to the calendar of the University. The four groups met regularly each Saturday from 8:45 to 10:45 a.m. for nine weeks or a total of eighteen hours.

Eight third year college students majoring in art education were selected to take part in the experiment on the basis of a battery of tests aimed at measuring their Art Strategy. The two with the clearest Divergent Art Strategy and the two with the clearest

Spontaneous Art Strategy were assigned as "teachers." Their counterparts were assigned as "observers." One Spontaneous and one Divergent teacher was assigned to follow a Prescribed course of study with their respective groups while the other two teachers were assigned to follow a Self-Developed course of study.

Approximately sixty students ranging in age from thirteen to seventeen and who had elected to take part in this experiment, were matched in such a way as to form four groups who were as alike as possible with respect to the three judged criteria. The data used for this purpose consisted of three art performance tests administered at the beginning of the term. Two drawings were based on "Interpretation of a Still-Life." The third drawing test was based on an imaginative motivational experience which asked the students to interpret "A Mood or Emotion of the Human Figure." As students were working, photographs were taken after three, nine and fifteen minutes, thus providing the data needed to measure their Art Strategy. The other set of data used for matching purposes consisted of the final art product of the three art tests and was used to measure Original-Aesthetic Quality.

The "best" of the three drawings made by each students was evaluated independently by each of a team of three judges for Original-Aesthetic Quality. As a first step each judge evaluated the drawings into three categories--high, medium and low, then evaluated each separately into three additional categories thus forming a nine-point scale.

The process photographs of the three drawings for each student were judged for both Divergent Art Strategy and Spontaneous Art Strategy by another team of judge-experts who, working independently, used judging procedures similar to those previously described for Original-Aesthetic Quality.

The reliability of the judgments made on each of the three criteria was measured by a symmetric correlation technique. All correlation coefficients were significant beyond the .01 level (with an range from .403 to .699) and the data was therefore accepted for further analysis.

Through observation and inspection of the scores, sets of four students were formed who were as alike as possible with respect to the three judged criteria. The four students in each set were then assigned to one of four groups. This matching method seemed feasible within the short period of time available. Nevertheless in order to determine the extent to which the groups were matched a statistical comparison was made later on the basis of the scores of the three criteria. The results showed that even at the .10 level none of the t-values between the means were significant and it was therefore concluded that the four groups were alike and matched.

Treatment

The treatment of the four groups in terms of art program variability or content was based on a depth approach to drawing and painting. It included a narrow range of related two dimensional media. Within these limitations, two kinds of art programs were structured and followed: (1) prescribed art program, and (2) a self-developed art program.

The prescribed art program, developed by the writer, was based on drawing and painting the human figure. The hope was to prescribe a course of study which would be of benefit to the teacher by providing her with information which she is generally not able to accumulate for herself due to lack of time, resources, experiences or finances. Nine activities were outlined in such a manner as to provide for a sequential, developmental and progressive art program. The following points were stressed: (1) art history and appreciation in connection with the studio activities, (2) out-of-class activities for students, (3) out-of-class activities for teachers in preparation for their lessons.

While two teachers followed a prescribed course of study, the other two were asked to develop independently their own art program within the limitations of drawing and painting. No other restrictions were placed upon them.

It was assumed that the teacher is an important variable who may have an effect upon the quality of the art products of the students not only in terms of their Original-Aesthetic Quality but also in terms of their Art Strategy. One treatment of the study was thus concerned with the influence the teacher had in his group which would be reflected in how art was taught or the method by which it was taught. Some current research has already indicated that the working strategy of individuals in art may be predicted and it will be recalled that it was on that basis that the teachers have been selected. Under a rationale which follows gestalt-holistic concepts it was hypothesized that these art strategies would manifest themselves in the method the teacher uses in the classroom as well as her own art work. The problem was to discover the degree in which measures predictive of art strategy are reliable when compared with actual teaching situations as they affect students' art productions.

One Divergent and one Spontaneous teacher and observer were assigned to the prescribed course of study and similar assignments were made for the self-developed course of study. In each group the teacher and the observer were of the same strategy.

The teachers' roles were either to develop their own art program or to carry out a prescribed art program assigned to them. They were responsible for the presentation and evaluation of the activities and also took the initiative in determining student-teacher interaction during the studio period. The role of the observers on the other hand was to act as a recorder of the activities of the teachers in terms of method and content. Regularly scheduled weekly meetings were arranged for the teachers and observers who followed the prescribed course of study to meet as a group and similar arrangements were made for those developing their own course of study.

Collection of data

The main data used in the analysis of this study consisted of a series of tests administered to the students at the beginning and at the end of the experiment. It consisted of the three art performance tests which have already been described in conjunction with the matching of students, and also of two paper and pencil tests (the FAT and the ISSD-63) both primarily developed by Beittel[1] in an attempt to determine measures which are predictive of the art strategy of individuals.

In addition the "best" art work produced by each student during the treatment period was selected by four judges for further analysis.

The data used to determine the actual method and content of the art programs of the four groups was based on the following descriptive evaluations: (1) teacher and observer journals, (2) tape recordings of classroom interactions and (3) notes on classroom observations made by the researcher.

The art judging procedures of the pre-tests and post-tests

Although the judge reliability of the pre-tests was good, certain revisions were introduced in the judging procedures of the final pre-test-post-test analysis in an attempt to further help improve the reliability.

During the pre-tests the judges had some difficulty in comparing "still-lifes" with "figures." It seemed that judging the two motivational themes together reduced the sensitivity of the measurement. Therefore, a logical solution was to have the judges make separate evaluations on each of the two themes.

A seven-point numerical rating scale was decided upon as providing a more satisfactory range for efficient and sensitive judgment than the nine-point scale.

The rating scale and the definitions of the judged criteria were supplemented with a product scale to be used by the judges as a yardstick in comparing it with the products to be evaluated. Only three points were represented in the product scale, namely, 6 or high, 4 or medium and 2 or low. For this purpose the drawings of the students who, for various reasons, were eliminated from the experiment were examined. Three "still-life" drawings for each the three criteria were selected. The drawings based on the "figure" however, seemed to fall into two thematic interpretations--those dealing with the "head" and those dealing with the "whole figure." It was therefore decided to select one of each of these two sub-themes as products for each of the three points on the scale. This product scale was considered an essential and necessary frame of reference within which to evaluate a part of this study.

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[1] Kenneth R. Beittel, "Effect of Self-Reflective Training in Art on the Capacity for Creative Action," Cooperative Research Project No. 1874, Office of Education, U. S. Department of Health, Education and Welfare, 1964, p. 7.

A training session was arranged with the judges in order to familiarize them with the definitions of the judged criteria, the rating scale and the product scale. Independent evaluations of the drawings were made by each judge from the randomly mixed drawings of the pre-tests and post-tests.

The reliability of the judges was established by an analysis of variance technique which considers (1) variation due to product, (2) variation due to judge and (3) variation due to chance error. These three terms were then substituted in the reliability formulae for scores based on one judge and for the mean score based on all judges. This technique was compared with the correlation technique normally used and showed to be more sensitive and accurate inasmuch as it included not only the relationship among judges but also that based on product and chance.

The reliability coefficients based on one judge and on all judges were generally high-ranging from .384 to .856 and from .565 to .881 respectively. The reliability for Original-Aesthetic Quality was higher than that for either Divergent or Spontaneous Art Strategy, thus contradicting some previous research studies. All coefficients were regarded as moderate to very high and thus the data was accepted for further analysis.

III. SUMMARY OF FINDINGS

The findings of this study were related to (1) analysis of differences between pre-tests and post-tests, (2) analysis of best art work of treatment period, (3) correlation analysis of all tests, (4) descriptive observations of the art programs, and (5) descriptive observations of the teaching methods.

Analysis of differences between pre-tests and post-tests

A two factor analysis of variance technique was used to compute the differences between the four groups for the fifteen variables. Namely, the three art tests as judged for three criteria, and the two parts of the FAT test and the four parts of the ISSD-63 test. The two factors of the analysis of variance were content and method.

Original-Aesthetic Quality. The mean of the differences indicated that in general none of the four groups gained much for either of the three criteria. The tendency seemed to be to do little more than maintain a status quo. The biggest differences was for Original-Aesthetic Quality (ranging from 2.746 to -3.445 while Divergent and Spontaneous strategies were holding their own (ranging from 1.698 to -2.015).

When examining the first still-life for Original-Aesthetic Quality (OA-S1) the F-ratio was significant at the .10 level with regard to strategy--the two groups having divergent teachers were doing better than the two having spontaneous teachers. For the second still-life (OA-S2) the opposite happened--the groups having spontaneous teachers were doing better (at the .05 level) than those having divergent teachers. It could be that the divergent teachers stressed immediate problem-solving which resulted in superior products on the first try, while the spontaneous teachers encouraged more exploration and experimentation leading eventually to better products.

The second still-life (OA-S2) also showed that the groups following a self-developed course of study were doing significantly better than those with the prescribed course of study. Moreover there was an interaction between content and method at the .025 level.

In general the self-developed course of study was better than the one prescribed and was better fitted for the spontaneous teacher than the divergent teacher. It may be that content should be closely related to teaching method.

It should be noted that none of the figure variables were significant. This is particularly interesting since the depth approach was based on the figure.

Art Strategy. Only two strategy variables showed significant F-ratios--both were related to the content factor of the first still-life. When judged for Divergent Art Strategy the two groups following a self-developed course of study were doing significantly better (at the .10 level) than those following a prescribed course of study. The same drawings when judged for Spontaneous Art Strategy showed the opposite--the groups with the prescribed course of study were doing better at the .01 level than those with the self-developed one. Since only one of the three art tests resulted in significant differences it was difficult to draw conclusions with respect to the art strategy variables.

The direction however seemed to be (1) that the strategies of teachers do not influence and affect the strategies of their students, (2) that the two groups following a self-developed course of study gained more in Divergent strategy while the two groups following a prescribed course of study gained more in Spontaneous strategy. It seems puzzling that the differences are found in relationship to the content factor of the analysis and not the strategy factor.

Analysis of paper and pencil tests

The overall picture of the four groups as seen in the differences between pre and post tests indicated that in three of the four parts of the ISSD-63 test the range of the means was almost nill (.709 to -.564)--indicating that the students had neither gained nor lost. The fourth part of the ISSD test (Social Self-Determination) had means ranging from 1.551 to -3.65. On the other hand both parts of the FAT test showed some range of means, namely, from 2.153 to 4.241 for FAT-Abstract and from 2.337 to -.698 for FAT-Flexibility. When there were gains they seemed to be attributable to the divergent teachers rather than the spontaneous teachers.

Only two of the six variables of the paper and pencil tests showed significant F-ratios. The FAT-Flexibility test showed a significance at the .10 level with respect to strategy--the two groups having divergent teachers were doing better than those having spontaneous teachers. The ISSD - Social Self-Determination test showed that the strategy factor was significant at the .01 level -- the two groups with divergent teachers doing better than those with spontaneous teachers.

It may be summarized that the divergent teachers were having a positive effect on the "Flexibility" and the "Social Self-Determination" of the students, while the opposite was true for the spontaneous teachers.

Analysis of best art work of treatment period

It was felt that since the four groups were alike and matched for Original-Aesthetic Quality with respect to the art performances of the pre-tests it would be possible to measure any differences which might exist among the groups for the "best" work done. After establishing the reliability of the judges (ranging from .755 to .888) a statistical comparison was made between the means. The resulting t-values indicated that there were no differences between the groups with respect to the Original-Aesthetic Quality of their art work. Moreover, the four groups not only performed very much alike but were all doing average art work.

Correlation analysis of all tests

Pre-tests and post-tests. The relationship between the variables of the pre-tests and post-tests was measured by a symmetric correlation technique. The results showed that all pre-post-test correlations (except one) were significant at the .05 or .01 level level. It seemed that when the treatments of the groups were not considered there was a definite lull or status quo between pre and post tests. Whatever little differences were found for some of the variables in the analysis of variance (which considers the two treatments as factors) thus indicated again that there was no movement either up or down -- this sameness seemed to continue to reinforce a possible "status quo theory" for that age level.

Art performances and paper and pencil tests. An analysis was made to determine the relationship between the art performance tests and the paper and pencil tests in order to determine the extent of which the FAT and the ISSD-63 can be used to predict either the Original-Aesthetic Quality or the Art Strategy of art performances.

The first overall inspection of the symmetric correlation matrix indicated that while most of the coefficients between the art tests and the paper and pencil tests were not significant, few were significant at the .05 and .01 level. All but two of those were found in the pre-tests. In general, however, the distribution of the correlations formed a scattered pattern.

For the pre-tests two of the art performances when judged for Original-Aesthetic Quality correlated with FAT-Flexibility at the .01 level and indicated that this part of the paper and pencil test could possibly be used to predict art performance for that criteria--at least before any "treatment was applied" since the post-tests presented a different picture. As a matter of fact whatever correlation there was during the pre-tests disapperared completely during the post-tests.

When the figure drawing as judged for Original-Aesthetic Qaulity (OA-F) was compared with the ISSD-Complexity test. There was a significant correlation at the .05 level for both pre-tests and post-tests. The other two art performances showed no correlation with ISSD-Complexity. It may be that Complexity was particularly related to the Original-Aesthetic Quality in figure drawing.

The other variables namely, ISSD-Aesthetic, Social Self-Determination and Theoretical, showed no correlation at all with Original-Aesthetic Quality.

The overall picture of the correlations of the paper and pencil tests and the Divergent Art Strategy showed that all, except one, were non-significant. The significant correlations were for the ISSD-Aesthetic test with the two still-life drawings during the pre-tests and with the figure drawings only during the post-tests. Exactly why the correlations were reversed for the pre and post tests is but a guess. In any case something seemed to happen which affected the relationship between the art tests as seen for Divergent Strategy and the ISSD-Aesthetic test which merits further investigation.

In examining the relationship between the paper and pencil tests and the Spontaneous Art Strategy it was noticed that practically all the correlations were non-significant. There were only three significant correlations for the pre-tests and none for the post-tests. During the pre-tests the FAT-Flexibility test correlated at the .05 level with the figure drawing but not with the two still-lifes. Although here again there was a lack of consistency in art performances the direction was generally toward a low positive correlation with FAT-Flexibility.

The only other correlation which should be mentioned was between the ISSD-Theoretical test and the first still-life drawing (S-S1) which during the pre-test showed low positive significance at the .05 level but which was lost during the post-test. The other two art performances (S-S2 and S-F) showed no correlation with ISSD-Theoretical. It seemed again that there was a good deal of inconsistency in the art performances of students.

In summary it must be said that the relationship between the art performances and the paper and pencil tests was vague, inconsistent and is cause for much further investigation.

Descriptive observations of the art program

Based on the weekly journals kept by the teachers and the observers, and also on the classroom observations of the researcher, a comparison between the four groups was made with respect to their art programs with the realization that it would encompass both subjective and objective reactions.

The prescribed art program was followed by the teachers assigned to it with little or no deviation. They both accepted the idea of following a course of study although they were particularly critical of it at the beginning of the experiment. The differences in the reactions of the two teachers were rather subtle. Although the Spontaneous teacher generally followed the art program she was not too worried about omitting parts of the outlined activities. The Divergent teacher, on the other hand, really took the prescribed program to heart and in general seemed to have more difficulty in following it.

The two teachers who followed a self-developed art program indicated that they were influenced, in planning their lessons from week to week, by the interests and needs of the students in their respective groups. Many suggestions for the lessons came from student-teacher interactions and it seemed that the students were a part of the program planning. By comparison the teachers who followed a prescribed course of study did not consult with students about possible class activities. It is true that they were asked to follow the course of study but nevertheless they were permitted to enrich and supplement it. All additions to the activities came from the teachers and not the students.

Although the self-developed courses of study were developed by two teachers who supposedly were of different strategies, the program which they made up from week to week, showed a similar pattern in the sequential development with respect to media used and the heavy stress on the human figure. Most of the presentations included some kind of instructional aid such as art books, slides or films which were used as a spring board for class discussions. Unlike the prescribed course of study however, the presentations were loosely structured and made use of on-the-spot improvisations.

It may fairly safely be said that the art content of the self-developed and prescribed course of study were very much alike. In retrospect this is attributed to the fact that the teachers selected for this experiment were affected by the climate and philosophy which prevailed in the Art Education Department of this University where they had also been students for three years.

Descriptive observations of methods of teaching

A fairly successful attempt was made in determining the strategies or methods of teaching in each group by evaluating the teachers' weekly journals and the classroom observations made by the researcher.

In essence the Spontaneous Art Strategy of the teachers was reflected in their attitudes and emphasis when working with students. They were confident, outgoing and quick to make decisions. They were concerned about student-teacher interactions and considered it an important part of teaching. Often however they became over-involved in verbalizing their own ideas and values and neglected to draw out the students' opinions. They sometimes became directed in their effort to develop the aesthetic sensitivities of their students. It would be fair to say that they taught very much like they painted.

The Divergent Art Strategy of the teachers on the other hand, reflected a careful and more calculated approach. They, also, taught much like they painted. They were very concerned with problem-solving and provided the students with such opportunities to a much larger extent than did the Spontaneous teachers. They were more successful in achieving student-teacher interaction. In general it seemed that they took teaching more seriously and thought of it as an enjoyable "task."

In summary it may be said that there was a real difference in the way the teachers with Divergent and Spontaneous Art Strategies handled their classrooms. It is necessary to investigate these differences further through empirical as well as descriptive studies.

IV. CONCLUSIONS AND IMPLICATIONS

Although the generalizations which are made from this study reflect its limitations, they are based on an attempt to present an honest and accurate picture of the many problems faced. The findings of any single educational or psychological research experiment, no matter how extensive, can, by itself, not be regarded as concrete proof of the rejection or acceptance of the hypotheses set out to be tested. Nevertheless, they form cumulative evidence of theories put to a test. Certain implications and calculated guesses are made which are based on what the writer has learned from this experiment.

1. It is clearly possible to reliably measure art products for certain criteria by employing judge-experts and providing them with (1) a "product scale," (2) a definition of the judged criteria and (3) an opportunity to take part in a "training session."

It is essential that the product scale be published in order to give the reader a clear indication of the interpretations of the judged criteria. The idea of using a product-scale as a "yardstick" is not new. Although it has been introduced in measuring art products as early as 1910 by Thorndike, it has not frequently enough been used by researchers. Too often research dealing with judgments of art products have relied too heavily on verbal definitions of judged criteria.

2. The reliability of the judges should be established and tested by using an analysis of variance technique since this method is more sensitive and accurate than the correlation technique normally used in research studies.

3. With respect to Original-Aesthetic Quality it may be concluded that, in general, the self-developed course of study was better for the Spontaneous teacher than the Divergent teacher. It is implied that the content of the art program may need to be related to the method or strategy used by the teacher with her students.

4. With respect to the Art Strategies it was difficult to draw conclusions due to the inconsistencies of the performances. Nevertheless the direction pointed to the fact that the strategies of the teachers do not influence or affect the strategies of their students and that the two groups following a self-developed course of study gained more in Divergent Art Strategy while the two groups following a prescribed course of study gained more in Spontaneous Strategy. It seems puzzling that the differences are found with respect to the content rather than method--as might have been expected.

5. The two paper and pencil tests indicated that the Divergent teachers has a positive influence on the "Flexibility" and the "Social Self-Determination" of the students, while the opposite was true for the Spontaneous teachers. More needs to be done with these two tests by using a larger sample population and also perhaps by concentrating on one age level only. In general the relationship between art performances and the FAT and ISSD-63 tests is vague, inconsistent and cause for further investigation. In any case in this study, it was found that the two tests cannot be used as measures to predict students' art performances or to measure gain in art.

In summary it may be said that there were a few positive findings in this study and although they were based on sound statistical treatment and were meaningful by themselves, they should also be interpreted within the overall context of all the findings. This picture generally reflects that the art performances of adolescents as judged for Original-Aesthetic Quality, Divergent Art Strategy and Spontaneous Art Strategy were highly inconsistent during the beginning and also the end of the experiment. The few differences which existed between the four groups as a result of either content or method seemed to be due to maintaining a status quo rather than a definite gain.

This study raises more problems than it answers and certain speculative questions are asked which need further amplication: (1) Could it be that the art abilities of adolescents have developed to such a degree as to make noticeable changes difficult? (2) Could observable differences be found when a longer treatment period is considered? (3) Could the inconsistency in the art performances of the students be attributable to the "crisis of adolescence?"

The writer urges that more research be done to determine the conditions under which the art abilities of adolescents can most successfully be developed and the effect that both method of teaching and content of the art program have on their art performances.

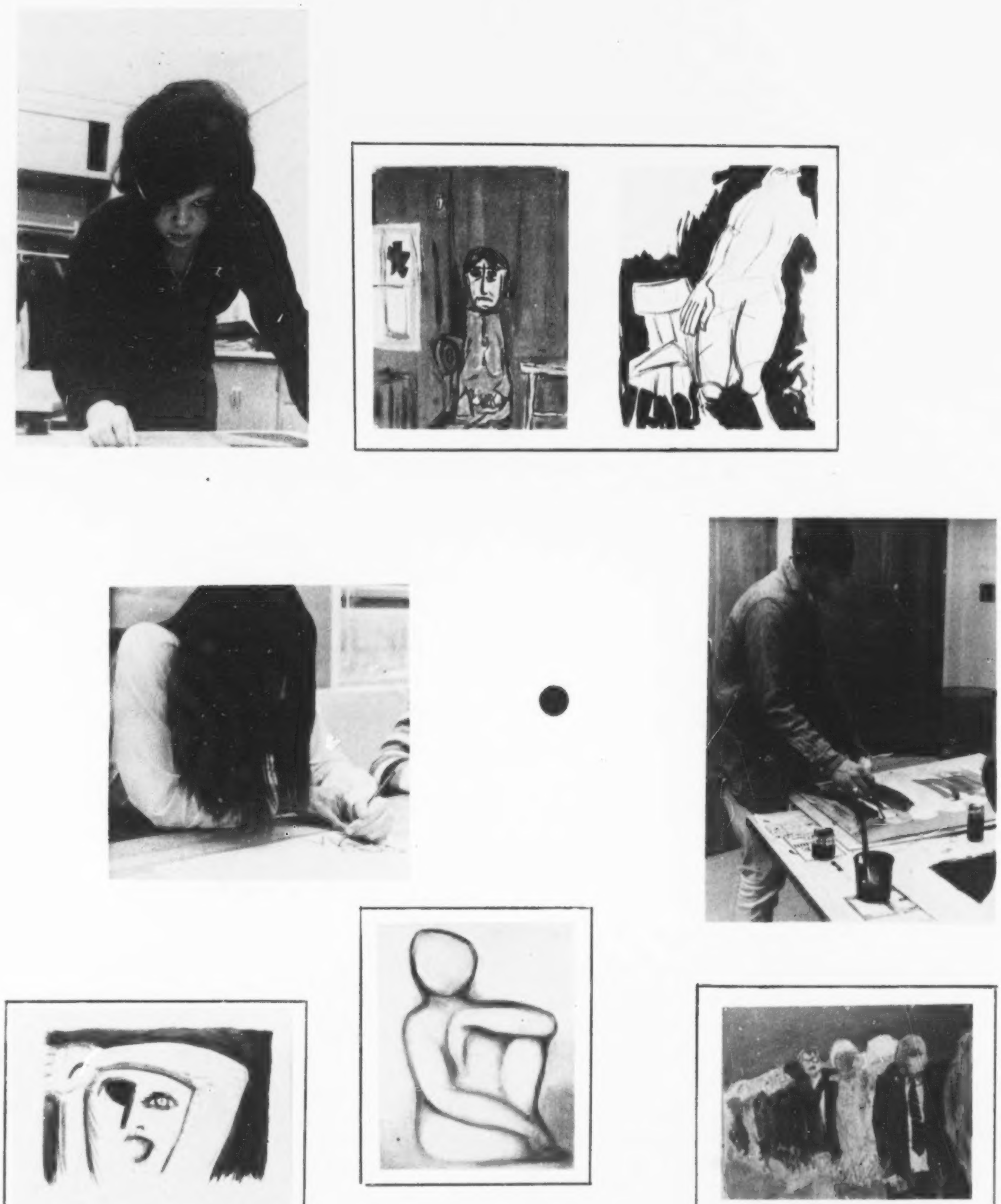

FIGURE 18

SOME OF THE STUDENTS AT WORK AND THEIR PRODUCTS

BIBLIOGRAPHY

1. Anderson, Harold (ed.). Creativity and Its Cultivation. New York: Harper Brothers, 1959.

2. Barkan, Manuel, and Ross L. Mooney (eds.). The Conference on Creativity: A Report to the Rockefeller Foundation. Columbus: Ohio State University Press, 1953.

3. Barnes, Earl. "A Study on Children's Drawing." Pedagogical Seminary. Vol. 2, 1892, pp. 455-463.

4. Beittel, Kenneth R. "Art." Encyclopedia of Educational Research. Edited by Chester W. Harris. New York: The Macmillan Company, 1960, pp. 77-87.

5. Beittel, Kenneth R. "Effect of Self-Reflective Training in Art on the Capacity for Creative Action." Cooperative Research Project No. 1874, Office of Education, U. S. Department of Health, Education, and Welfare, 1964.

6. Beittel, Kenneth R. and Robert C. Burkhart. "Strategies of Spontaneous, Divergent, and Academic Art Students." Studies in Art Education. National Art Education Association, Vol. 5, No. 1, Fall, 1963.

7. Burkhart, Robert C. Spontaneous and Deliberate Ways of Learning. Scranton, Pa.: International Textbook Company, 1962.

8. Chow, Flora. "Two Factor Analysis of Variance." Computation Center, The Pennsylvania State University, February 1964. (Mimeographed)

9. Craig, Richard. "Analysis of Variance." (Revised). Computation Center, The Pennsylvania State University, May 1963. (Mimeographed)

10. Crespi, David. "A Study of the Role of Early Adolescent Reality for Art Education in the Junior High School." Doctor of Education Project. New York: Teachers College, Columbia University, 1959.

11. Eisner, Elliot W. "A Paradigm for the Analysis of Visual Problem Solving." Studies in Art Education. National Art Education Association, Vol. 3, No. 1, Fall 1961, pp. 47-54.

12. Frankston, Leon. "Some Explorations into the Effect of Creative Visual Art Experiences upon the Poetry Writing Quality of Eighth-Grade Students." Studies in Art Education. National Art Education Association, Vol. 5, No. 1, Fall 1963.

13. Gaitskell, Charles D. and Margaret R. Art Education During Adolescence. Toronto: The Ryerson Press, 1954.

14. Hastie, Reid and David Templeton. "Art Education in the Secondary Schools: A Study to Ascertain the Effects, Influences, and Modifications on Art Education's Practices and Programs Since 1957." Research Report 1 - 1963. Department of Art Education, University of Minnesota, 1963.

15. Hoffa, Harlan E. "Overview: Outcome and Effect." Art Education Bulletin. Eastern Arts Association, Vol. 18, No. 4, April 1961.

16. Howlett, Carolyn S. "An Analysis of Art Curriculum in Terms of the Development Needs of Youth." Research in Art Education. Ninth Yearbook. National Art Education Association, 1959.

17. Kincaid, Clarence E. "The Determination and Description of Various Creative Attributes of Children." Studies in Art Education. Vol. 2, No. 2, Spring 1961, pp. 45-53.

18. Koffka, Kurt. The Growth of the Mind. New York: Harcourt, Brace and Company, 1928.

19. Lally, Ann M. (ed.) Art Education in the Secondary School. National Art Education Association, Washington, D. C., 1961.

20. Lee, Harry B. "On the Esthetic States of Mind." Psychiatry. Vol. 10, No. 2, 1947-1948, pp. 281-306.

21. Lowenfeld, Viktor. Creative and Mental Growth. Third edition. (Revised). New York: The Macmillan Company, 1957.

22. MacKinnon, Donald. "The Creativity of Architects." Paper read at the 1962 University of Utah Research Conference on the Identification of Creative Scientific Talent, Brighton, Utah, June 1962.

23. Mattil, Edward L. "The Effect of a 'Depth' vs. a 'Breadth' Method of Art Instruction at the Ninth Grade Level." Studies in Art Education, Vol. 3, No. 1, Fall 1961, pp. 75-87.

24. Mearns, Hughes. Creative Power: The Education of Youth in the Creative Arts. Second edition. (Revised). New York: Dover Publications, Inc., 1958.

25. Mitzel, Harold E. and Donald M. Medley. "A Tentative Framework for the Study of Effective Teacher Behavior." Journal of Experimental Education, Vol. 30, No. 4, June 1962, pp. 317-320.

26. Munro, Thomas. "School Instruction in Art." Review of Educational Research, Vol. 16, No. 2, April 1946, pp. 161-181.

27. New York City Board of Education. Art - Seven, Eight, Nine, Ten. Curriculum Bulletin No. 5, 1954-1955 Series. New York: Board of Education of the City of New York, 1955.

28. Patrick, Catharine. "Whole and Part Relationship in Creative Thought." American Journal of Psychology, Vol. 54, No. 1, January 1941, pp. 128-131.

29. Parnes, Sidney J. "Can Creativity Be Increased?" Studies in Art Education. National Art Education Association, Vol. 3, No. 1, Fall 1961, pp. 39-46.

30. Plato. Symposium. William L. Bryan, (ed.). New York: Charles Scribner's Sons, 1897.

31. Reed, Carl. Early Adolescent Art Education. Peoria, Illinois: Charles Bennett Company, 1957.

32. Roberts, M. E. and A. T. Wink. "Symmetric Correlation Program Floating Input." (Revised). Computation Center, The Pennsylvania State University, January 1964. (Mimeographed)

33. Ross, George K. "Some Research on Researches on 'Art' in the Junior High School." Art Education Bulletin. Eastern Arts Association, Vol. 4, No. 1, April 1953, pp. 17-20.

34. Thurstone, L. L. "The Measurement of Values." Psychometric Laboratory. University of Chicago, 1952, p. 9.

35. Westcott, Malcolm and Jane Ranzoni. "Personality Correlates of Intuition." Paper read at Eastern Psychological Association Meetings, Atlantic City, New Jersey, April 1962.

36. Wink, A. T. "Difference Between Means, Non-Correlated Samples of Unequal Size." Computation Center, The Pennsylvania State University, August 1962. (Mimeographed)

APPENDIX A

THE PENNSYLVANIA STATE UNIVERSITY
269 Chambers Building
University Park, Pennsylvania 16802

College of Education
Department of Art Education

Area Code 814
865-6570

During the Fall Term 1964, the Art Education Department of the University will be conducting special art classes for a selected number of junior and senior high school students who are interested to learn more about art. These classes are part of an intensified art program supported by the U. S. Office of Education.

Students taking part in this program will follow a course in Drawing and Painting which has carefully been prepared to develop their maximum aesthetic and creative abilities. The students will concentrate their activities in a limited range of two-dimensional media such as charcoal, pen and ink, water color, and polymer tempera. The course will also be enriched by an integrated study of the work of contemporary and past artists through slides, films, demonstrations and field trips. Individualized instructions on a person-to-person basis will be provided.

The classes will meet in Chambers Building on Saturdays from 8:45-10:45 September 23, 1964 until December 5, 1964 (inclusive). There will be a $7.00 materials fee.

If you are interested in attending these art classes regularly and would like to take advantage of this unusual opportunity, please fill out the enclosed card and return it within a week. You will then be notified as to your room assignment.

Should you have any questions, please do not hesitate to call me personally (865-6570).

Very sincerely,

Leon Frankston
Assistant Professor
Department of Art Education

LF:fh
Enclosure

INSTRUCTIONS TO STUDENTS

This morning you will be engaged in a series of activities which will give us an idea of how creative and imaginative you are. Although none of the work will be graded in the sense that some of you may have experienced in the public schools you are expected to do your very best according to your own standards and values. Do not think of one "right way" to draw but rather of a way which reflects your own personality and character. Try to be inventive and imaginative. Express your self freely and without inhibitions. Do not imitate or copy the styles of others but try to develop a style of your own. Be yourself!

As you work a photographer will move around the room taking pictures of your work. Place your drawing with the long side toward you and with your identification number in the lower left-hand corner. After the picture has been taken resume your work. You will soon get use to this process and will not be distracted in your creative efforts.

You are asked to do three drawings of about twenty minutes each. The first two are based on the same still-life and the third on the figure.

Drawing I and Drawing II: Interpretation of a Still-life.

In order to give you the opportunity to "warm-up" and to become acquainted with the still-life in front of you are asked to make two drawings of it using any method, technique, variation in an interpretation you like. You are given complete freedom in interpreting it in any way you like.

Maybe in the past you have been asked to draw a still-life the way you see it but this is a special art class and today you are on your own. Since there is no one right way to draw, no one will tell you which rules to follow or not to follow. You should draw in a way which reflects your personality and character. Remember that art is a way of expressing yourself -- aesthetically and creatively. You may draw the still-life abstractly or realistically and use parts of it or all of it.

You will be working with drawing pencils and graphite sticks which, as you probably know, may be used in many different ways. You may use them in any way you like.

Drawing III : A Mood or Emotion of the Human Figure

Some say that the human form is the most beautiful form on earth; others prefer cantaloupe. Today you are asked to express, in a personal way, an emotion or a mood as seen in the human figure.

Everyone from the physician to the dancer is interested in the human body. For centuries artists have been concerned with it as a way of showing human emotion through a visual image. We all know that facial expression as well as body positions reflect moods and emotions. Can you think about a mood or emotion that you would like to express? Perhaps it is one which you have seen or felt in others.

Express the theme in any way you like -- realistically or abstractly. Be imaginative and inventive in your approach and attempt to develop a style of your own.

You will again be using drawing pencils and graphite sticks.

APPENDIX B

THE PRESCRIBED COURSE OF STUDY

A NINE-WEEK COURSE OF STUDY
FOR TEEN-AGERS
IN DRAWING AND PAINTING
THE HUMAN FIGURE

A reinforced depth approach to art

by

Leon Frankston
Assistant Professor of Art Education
The Pennsylvania State University

1964

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INTRODUCTION

The course of study described in this booklet is based on Drawing and Painting the Human Figure. It is has been especially designed to meet the needs and interests of teenagers (14-17 years old) attending the Saturday Art Classes of the Art Education Department of the University.

Some General Points

It was felt that a course of study could be prepared in advance and prescribed to a particular group of teenagers providing sufficient information is available about the general nature of the population from which the subjects are selected. In this case it should be mentioned that the students for whom the course of study has been written are of a fairly predictable background. They reflect the community of which the University is the center. Their artistic abilities and interests have been observed by the writer during the past seven years through the Saturday Art Classes of the University.

It is hoped that the "prescribed" course of study will be of benefit to the teacher by providing him with information which the average teacher is not able to accumulate for himself due to lack of time, resources, experiences, or finances. The outline of each of the following nine activities has been given careful consideration and should be thoughtfully studied and adhered to by the teacher. On the other hand, it is realized that a teacher likes to feel a certain kind of autonomy in his class room. The activities are planned in such a way as to provide both teachers and students with a general framework within which to work and express themselves creatively. While certain specifics are outlined the teacher is free to supplement the lessons within any manner he considers appropriate. However, the outline for each activity should not be altered through omissions or substitutions. It should be made clear that the purpose of the course of study is only to control the "content" of the art program in terms of development, sequence, resources, etc. To a large extent the "method" of teaching the material is left up to the teacher.

Since the way students learn is dependent upon that which is taught--content, and the way in which it is taught--method, the teacher should consider himself of critical importance in this experiment. The students usually reflect the personality and attitudes of the teacher who in turn establishes a "climate" for the class as a whole. The teacher should be himself and attempt to develop his own "rhythm" of teaching. Although he may want to compare himself to other teachers and also reflect upon his own teaching he should above all teach according to his own beliefs and own values. Remember that educational research has not yet found "the right way to teach."

Supplies, equipment and storage of art work

It is the responsibility of the teacher to see to it that the supplies, materials and equipment are available for each lesson. The teacher must provide for (1) the proper organization, care, use and maintenance of art supplies and equipment, (2) the effective and orderly, distribution and collection of supplies, and (3) adequate storage of students' art work. The materials to be used should be out on the tables so that students may start to work immediately after the presentation of the lesson.

The work of each student should be carefully labeled on the back with: (1) name of student, (2) age, (3) theme of activity, (4) room number and (5) date (if more than one work is done on one day then the order of production should also be indicated).

Aesthetic Appearance of Room

It is only natural to expect that an art room reflect an exciting aesthetic visual appearance. Bulletin boards should be attractively and imaginatively arranged with the work of students and/or instructional visual materials pertinent to the lesson to be presented. Displays and exhibits should be labeled in a manner befitting a sensitive art teacher.

The ideas pertaining to display of art work which are presented in the outline of the course of study should be followed. However, it will be noticed that, a lot is left up to the teacher. He should supplement the ideas presented in any way he sees fit.

The Audio-Graphic Machine*

The Audio-Graphic Machine is a self-learning or reinforcement teaching device which is programmed simultaneously with visual and audio materials. It has originally been designed for use by individual students and throughout this course it will be available on that basis. In other words, it will be available together with various programmed materials to give individual students an opportunity to motivate themselves after an activity has been presented. It is hoped that the materials will meet the needs and interests of different kinds of students.

In addition to being used as a self-learning device the Audio-Graphic will also be used to present an activity to the class as a whole. Although this is not the primary function of the machine it was felt that it would be physically feasible to group seventeen students around it in such a way that they would be able to see the slides presented.

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*Instructor Model 150, Graflex, Inc., Rochester, New York

The materials programmed for the Audio-Graphic consists of different series of slides and taped commentaries related to the activities in which the students are engaged. They are usually ten to fifteen minutes long and should be used as indicated in the following outline.

An assistant will be available to help you operate the machine. Since it will be used throughout the course in class presentations or in individual learning situtations the teacher should become familiar with it.

Students Activities Outside of Class

Quite often students and teachers associate an art course only with the actual classroom activities. The importance and need of students to carry on art activities outside the classroom is too often overlooked. The abilities and potentials of students are therefore not sufficiently explored. It is felt that independent out-of-class art activities are of tremendous importance and with this in mind each of the following nine art activities provides for specific work which students ought to do from one week to the next. This outside art work is directly related to the actual classroom work which immediately precedes or follows it. Sometimes it takes the form of studio work and at other times it is more closely related to "appreciating art" through visits to places where art work is displayed.

It is the task of the teacher to see to it that students develop a positive attitude toward doing art work from week to week and at the same time to realize that the idea may be new to many of them. The equivalent of about one hour's work is planned in the activities outlined. The teacher should clarify any question the students may have regarding the outside work. Each week he should discuss the work they have done and give them sincere and helpful guidance and criticism in order to help them develop a personal way of working which is both aesthetic and expressive.

The students will be provided with sketch pads in which all their outside work should be done.

In addition, books on art will also be available and students may check them out from one Saturday to the next. The teacher will be responsible for those books and should keep a record of the books borrowed. It should be made clear that, although there is some red-tape in checking out books, borrowing books should be encouraged.

Teacher Activities Outside of Class in Preparation for Lesson

It will be noticed, by reading the following course of study, that the teacher has a minimum amount of lesson-planning preparation to do in terms of the activities which he has to present to the class. The content of each lesson is fairly well outlined. The work of the teacher, from one week to the next, will therefore consist primarily of studio work rather than readings or research.

The teacher should carefully and thoroughly follow the out-of-class studio work assigned to him in each lesson. It will be noticed that in most cases the studio work for the teacher is similar to that which will be presented by him to the students on the following Saturday. The purpose of the teacher's out-of-class art work is to involve him in problems which he may encounter in teaching. It is hoped that through the actual "doing" of an activity he will become a more sensitive and effective teacher.

In addition to the studio work, the teacher will also be assigned some work intended to help him present the lesson of the week through slides of contemporary and past artists.

ACTIVITY I

Teenagers usually have a keen interest in the human figure due to the fact that they are going through a period of transition from childhood to adulthood in which physical development plays an important part. Often their interest in the figure will be matched by a limited ability to draw it. The task of the teacher therefore is to provide the students with specific guides through which they will not only improve their ability to draw the figure but, more importantly, to draw it in a personal way--in a way which reflects an individualized style.

In introducing the drawing of the human figure the teacher may find that many students in the class have preconceived ideas about what is meant by drawing--some may think in terms of "one right way," others in terms of "realistic rendering" resulting in stiff drawings, and still others in terms of an "I-can't-draw" attitude. In order to give all students a positive approach to drawing the human figure specific directions are set up as part of the art activity of today. It is felt that, through directed guidance, students will be able to gradually develop a personal style of drawing which is meaningful and satisfying to them and which at the same time has aesthetic and expressive value.

The first activity of this Drawing and Painting course has been designed as an "exercise" to give the students an understanding of two basically different styles or ways of working in art. It consists of two parts: (1) contour drawing and (2) gesture and action drawing. In general a divergent or synthetic way of working will be stressed through contour drawing of the posed human figure and a spontaneous or analytic way of working will be stressed through gesture and action drawing of the human figure. Both parts of this activity are not meant to develop finished art products but rather to involve the students in experimental and new ways of working in order to make them see new horizons and new possibilities which may become the foundation of the students' future art work and the beginning development of individualized styles.

PART 1--CONTOUR DRAWING

Topic

Contour Drawing of the Human Figure (45 minutes)

Materials

1. Jet black ebony drawing pencils.
2. Graphite sticks.
3. Black and sanguine conte crayon.
4. Charcoal.
5. Newsprint paper, 18" x 24".
6. Drawing boards.
7. Thumb tacks.

Aims

1. To increase the students' horizons about the different ways to drawing the human figure.
2. Development of an awareness of details and powers of observation.
3. Coordination of sense of touch with the sense of sight.
4. Sensitivity to the linear qualities of the "line."
5. Freeing and loosening the students of stiff and rigid preconceived notions of the "right way" to draw the figure.
6. Making use of and finding imaginative elements in accidental lines resulting from restrictions imposed by contour drawing.

Presentation

In presenting the activity of the day the teacher should assume that the students' understanding and appreciation of the human figure in drawing is limited and needs to be amplified. A series of slides on "Drawing and Human Figure" has been carefully prepared together with a taped commentary to emphasize the various ways the human figure has been interpreted by contemporary and past artists. The artists represented have been selected because of their varying individual approach to drawing the human figure. After the teacher has introduced the overall plan for the activities of the day, he should present the slides and commentary on "Drawing the Human Figure" by using the Audio-Graphic Machine.

The teacher should become familiar with the programmed material before the class period in order to be able to lead a 5-10 minute discussion with the students at the end of the presentation. It should be made clear that the teacher should encourage student participation, involvement and identification with the art work that has been seen. He should remember, however, that it is his task to teach, guide and present his own views and judgments, and at the same time encourage and expect the students to do the same.

After seeing the slides and having had a brief discussion (which together should not take more than 20-25 minutes) the teacher should explain that the first part of the activity of today will deal with contour drawing giving everyone a common point of departure in the struggle for an individual style of drawing. A professional model will be available for the students to draw.

The following excerpt from Nicolaides describes the points which the teacher should stress in the presentation of contour drawing:

> ...Focus your eyes on some point--any point will do--along the contour of the model. ...Place the point of your pencil on the paper. Imagine that your pencil point is touching the model instead of the paper. Without taking your eyes off the model, wait until you are convinced that the pencil is touching that point on the model upon which your eyes are fastened.
>
> Then move your eyes slowly along the contour of the model and move the pencil slowly along the paper. As you do this, keep the conviction that the pencil point is actually touching the contour. Be guided more by the sense of touch than by sight. This means that you must draw without looking at the paper, continuously looking at the model.
>
> Exactly coordinate the pencil with the eye. Your eye may be tempted at first to move faster than your pencil, but do not let it get ahead. Consider only the point that you are working on at the moment with no regard for any other part of the figure.
>
> Often you will find that the contour you are drawing will leave the edge of the figure and turn inside, coming eventually to an apparent end. When this happens, glance down at the paper in order to locate a new starting point. ...but do not draw while you are looking at the paper....
>
> . . . .
>
> This exercise should be done slowly, searchingly, sensitively. Take your time. Do not be too impatient or too quick....[1]

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[1] Nicolaides, Kimon. The Natural Way to Draw. Boston: Houghton Mifflin Co., 1941, pp. 9-11, Section I.

The following points should be stressed and reinforced during the presentation of the lesson as well as on a person-to-person basis while the students are working:

1. Let the line sprowl all over the paper.
2. Draw slowly.
3. Draw without looking at the paper and continuously looking at the model.
4. Keep the conviction that the pencil is actually touching the contour.
5. Be guided more by your sense of touch than sight.
6. Glance down at paper only to locate new starting point.
7. Develop an awareness of the relationship of lines to one another.
8. Look for the rhythmic quality of accidental lines.

Procedure

1. Arrange tables in as large a circle or square as possible with the chairs on the outside in such a way as to leave room for a model in the middle of the room.
2. Provide a stand and a chair or stool for model.
3. Locate art materials at different points in the room so that they are easily accessible to students.
4. Provide each student with drawing board, paper and thumb tacks.
5. Set up Audio-Graphic Machine in one corner of room and group class compactly around it so that all students are able to see the slides.
6. A professional model will be available for the contour drawings. Students should work on three poses of about ten minutes each. The poses that the model takes are left up to the teacher; they may be sitting or standing and include whatever props are appropriate.

Evaluation Critique

At the end of the three contour drawings the teacher lead the class into a critique of their work. Both students and teacher should have an opportunity to evaluate and discuss their progress with respect to the aims of the lesson. Only 5-10 minutes should be allotted for this evaluation period.

PART 2--GESTURE AND ACTION DRAWING

Topic

Gesture and Action Drawing of the Human Figure (25 minutes)

Materials

1. Materials used for Part 1.
2. Chinese brushes or other water color brushes.
3. Pens.
4. Black india ink.
5. Cans for water.

Aims

1. To grasp the unity inherent in any pose of the figure.
2. To gain boldness and self-confidence through a direct and quick working procedure.
3. To develop freedom of arm movements rather than cramped and tight drawing.
4. To strive for the rhythm of the basic form of the figure.

Presentation

The evaluation critique of the contour drawings should lead into the presentation of gesture and action drawing and give students the feeling that there are many ways of drawing the human figure and that "gesture and action" has been chosen as a point of contrast to "contour." Each of these two methods are almost opposite in their approaches.

Gesture and action drawing should be stressed and is explained by Nicolaides:

> Probably you realize already that contour drawing is of the type which is to be done 'painstakingly.' On the other hand gesture drawing which you will begin today, is to be done 'furiously.' ...In quick studies you will consider the function of action, life, or expression--I call it gesture.
>
> . . . .
>
> As the model takes a pose, or as the people you watch move you are to draw, letting you pencil swing around the paper by the sense of the action you feel. Draw rapidly and continuously in a ceaseless line, from top to bottom, around and around, without taking your pencil off the paper. Let the pencil roam, reporting the gesture.
>
> . . . .

> You should draw, not what the thing looks like, not even what it is, but what it is doing.
>
> . . . .
>
> It is only the action, the gesture, that you are trying to respond to here, not the details of the structure. You must discover--and feel--that the gesture is dynamic, moving, not static. Gesture has no precise edges, no exact shape, no jelled form. The form are in the act of changing. Gesture is movement in space.[1]

The focus should be on the entire figure and students should keep the whole thing going at once.

The following points should be made during the presentation and should again be reinforced on an individual basis while students are working:

1. Comparison between details of contour drawing and generality of gesture drawing.
2. Developing a feeling for the movement of the whole figure.
3. Draw not what the figure looks like not even what it is, but what it is doing.
4. Keep the whole figure going at once.
5. In the first five seconds put something down that indicates every part of the body in the pose.
6. A gesture drawing is like scribbling rather than like printing carefully.
7. Quick sketches aimed at loosening up the students.

Procedure

1. The physical set up is similar to the one used for "contour drawing" except this time the students should work standing up.
2. Students should be encouraged to use different materials or combinations for each pose.
3. A professional model will again be used. Poses of one to four minutes should be drawn by students. A variety of props should be used in order to emphasize gesture. Typical poses might be based on sports, dance, daily acts such as standing, stooping, kneeling, leaning or pulling on

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[1] Nicolaides, op. cit., Section I.

something, and also poses expressive of different emotions such as fear and weariness.

4. As students progress in their work they should be encouraged to place several gesture drawings on one page by relating and/or overlapping one with the other in an interesting manner.

Evaluation Critique

At the end of Part II of this activity another class critique should take place, similar to the first one. Students should be given an opportunity to compare the two styles of working and discuss how it might help them in the development of their individualized styles. This evaluation should take about 5-10 minutes.

Student Activities Outside of Class

Twenty minutes before the end of the period the teacher should present to the class the idea that each week students will be required to do some outside work. The need and importance of independent work outside of the classroom should be stressed. Students should be challenged to pursue their interest and abilities in order to get the maximum benefit from this course. Each week the students will be given some form of art work to do which will relate to the lesson of the day as well as the following lesson. Although they should not be threatened, they should be made to feel by the teacher that working outside the class is an important part of their development. The teacher should use his ingenuity, imagination and personality to develop in the students a positive approach to their outside work. This may be done through reinforcement, challenge, praise, and taking a personal interest in them as adolescents.

A series of slides together with a commentary--entitled "Sketching Out-of-Class," has been prepared to show the importance of independent work as seen through the eyes of artists. The slides should be shown by using the Audio-Graphic Machine. This may be preceded or followed by a short discussion.

Sketch pads have been provided which students should label with their name and the name of their teacher. Since some art work will be assigned for the sketch pads each week they ought to be brought to class.

For next Saturday each student should do the following:

1. Make three contour drawings of some object or combination of objects which he considers interesting in terms of lines and details.

2. Go some place where he is likely to see people actively moving about and make six gesture and action drawings emphasizing the feeling of movement of the whole figure. Example of such

places* are: Nittany News, Corner Room, School Cafeteria, Tennis Court, The Kitchen, etc.

Teacher Activities Outside of Class in Preparation for this Activity

In addition to being fully familiar with the plan of this activity teachers should also refer to Nicolaides (pp. 5-23) where some of the main points made in this lesson are further detailed.

The two-hour workshop activity of the teachers will be similar to the plan set for the students whom they will teach with the exception of the professional model. For the contour-drawing part of the activity the teachers may use a mirror or each other as models. For the gesture-drawing part of the activity they should go to the ceramics room where people in action may be seen. A teacher-group evaluation should follow each of the two parts of the workshop.

ACTIVITY II

Topic

Rhythm, Movement and Action in the Human Figure

Materials

1. Students' individual sketch pads.
2. Graphite sticks.
3. Black and sanguine conte crayon.
4. Jet black ebony drawing pencils.

Aims

1. To give students additional experiences with gesture and action drawing as seen in the human figure.
2. To reinforce and review progress made by pupils.
3. To get students to develop an individualized style of drawing the figure.
4. To explore possibilities of integrating gesture drawing with contour drawing.

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*Local resources of the community.

Presentation

The first few minutes of the class (and as the students arrive) should be spent by the teacher in becoming acquainted with the students by discussing with them, in an informal manner, the work they have done in their sketch pads. They should be praised and challenged for their work outside of class. The teacher should show serious but friendly concern about the students who have not done their work. Since in the past the students may not have been given art work to do outside of class the teacher should establish a real atmosphere that "this work is expected of them" as part of this course.

After this informal discussion the activity should be explained to the class in such a way as to make students aware of the purposes and aims of the film and its relationship to the field trip.

The film Art and Motion (17 minutes), to be shown by an operator, will serve as one part of the motivation of the lesson of the day. In viewing the film students should be asked to look for the relationship between the human figure and other natural or man-made form as seen in rhythms, movements and action. After the film there should be a five minute teacher-class discussion of the aesthetic relationships observed.

Toward the end of this discussion students should be told that they will get further practice in drawing the human figure while visiting a dance class.[1] They should carefully consider the following points while sketching:

1. Use of a variety of materials in any combination or experimental way.
2. Groups of figures or single figures may be drawn.
3. Several figures may be arranged on one page to form an interesting arrangement or composition.
4. While the primary objective of this lesson is to develop more proficiency with gesture and action drawing of the human figure the teacher should make clear that details may be added to accent and emphasize parts of the drawing.
5. Stress should be placed throughout the lesson on individualized styles of drawing.
6. Select those lines which seem to intensify the meaning of the pose.

The points above should be stressed on a class basis before the trip and also on a person-to-person basis as students draw in the dance class.

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[1] Information on the dance class to be visited will be furnished at a later date.

Procedure

1. 5-10 minute group discussion on sketches made outside of class.
2. Film showing--20 minutes.
3. Discussion of film and of related field trip--10 minutes.
4. Trip to dance class and sketching of dancers.
5. Class should be back in time to have a ten minute discussion and critique of work done in dance class.

Evaluation Critique

The last ten minutes of today's lesson should be used to discuss student progress in relation to the aims of the lesson (see section on "Aims")

Student Activities Outside of Class

For next week students should be asked to make four sketches of a human figure in any pose they like. Each sketch should attempt to show a different approach or style. Emphasis is to be placed on experimentation and discovery of various ways of drawing the figure. Students should be encouraged to recall the work they have done in contour and gesture drawing and use these two approaches to discover new styles. The sketch pads should be returned to students so that they may do their outside work.

Teacher Activities Outside of Class in Preparation for this Activity

Today's activity is based in part on Chapter 2 of Nicolaides (pp. 23-47). The teacher should, in addition to being familiar with the outline of this lesson, also know and understand the approach described in detail by Nicolaides.

In addition, the teacher should review the film which will be shown "Art and Motion" by contacting Mrs. Udine in the Film Library of Pattee.

A bulletin board display should be made in the classroom based on the topic of today's lesson. It should include some of the work of the students and other visual materials that the teacher finds appropriate. Care should be taken in arranging the display in an aesthetic manner and in capturing the mood of "gesture and action."

The workshop activity to be followed by the teacher is again similar to that of the students. A dance class or some other place where people in action are seen may be visited for drawing purposes.

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ACTIVITY III

Topic

Interpretation of the Human Figure

Materials

1. Drawing pencils and graphite sticks.
2. Black and sanguine conte crayon.
3. Pen, brushes and india ink.
4. Newsprint paper, 18" x 24".
5. White drawing paper, 18" x 24".
6. Drawing boards.
7. Thumb tacks.

Aims

The general aim of this activity is to give the students additional experience in drawing the human figure through an exploratory approach with different media and styles. In this activity (as throughout the course) the stress should be on the development of a personal and individualized style of working. The following points should be stressed:

1. Continue the development of individualized style.
2. Emphasize interpretation of posed figure as contrasted to a realistic rendering.
3. Work for dramatization through the use of dark and light.
4. Develop expressiveness through selectively, exaggeration and abstraction.
5. Consider placement of the figure on paper and relation of figure to background.

Presentation

Nicolaides writes:

> . . . Preconceived ideas about things with which you have no real experience have a tendency to defeat the acquiring of real knowledge.
>
> . . . .

> ...We think too often of the thing we draw in terms of the ways we have seen it drawn....[1]

In order to give students the idea that an artist interprets rather that copies the human figure a series of slides has been prepared. The slides will serve as the main motivation of the class and should be shown at the beginning of the period. The teacher should become familiar with these slides in order to be able to discuss them with the class. No commentary is supplied and the Audio-Graphic will not be used. The slides are meant to exemplify the aims of the activity and stress:

1. The role of selective seeing as necessary to the act of expression.
2. The contrasting role of drawing as a science and drawing as art form.
3. The liberties artists take in interpreting the human figure: abstracting, exaggerating, etc.
4. The importance of environment and space in figure drawing.
5. A comparative view of various treatments of similar subjects.
6. The scale and the placement of a drawing related to boundaries of page and composition.

During the class discussion the teacher should encourage students to identify with the slide reproductions and present personal opinions on their likes and dislikes. The bulletin board display should also be used as a source of further discussion.

Throughout the presentation the teacher should make clear to the students the art activity in which they will engage and the aims and purposes of the lesson. These points should be summarized at the end of the presentation which should take about fifteen minutes.

As the students work on their drawings the teacher should approach them on a person-to-person basis and attempt to help each one to develop his own personal way of working.

The Audio-Graphic Machine will be available and should be used by the students to satisfy their needs and interests. Several "series" of programmed materials will be available; some will be new and others will be the ones already shown to the class. They should be used to reinforce or present new views at any time throughout the working period. Several students may view the slides at the same time. However, this should not become a corner for "social gathering" although discussion about art should be encouraged.

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[1] Nicolaides, *op. cit.*, Section 5.

Procedure

1. The physical arrangement of the room should be identical to that outlined in "Activity I."
2. A slide projector and screen (available in the Art Education office) should be set up before the class starts.
3. The teacher will introduce the activity by showing to the class a series of slides on the human figure.
4. A professional model will be provided for today's activity.
5. Drawing boards should be used and pupils should be encouraged to stand up.
6. Students should be allowed to select their own materials.
7. The first 30 minutes should be spent as a "warm-up" session consisting of a series of short poses. During this warm up period the pupils should use gesture drawings and contour drawings in order to study the model and explore individualized styles of working. The teacher should decide on the pose the model should take.
8. This part of the lesson will be followed by two different 30 minute poses which should develop into a concentrated detailed study of the model. Each of these two drawings will be followed by a class critique.

Evaluation Critique

Let each student choose what he considers to be his best work of the day. Place the work on bulletin board and discuss as a group the variety of approaches to figure drawing, stressing in particular the student's search for an individualized styles of working. The teacher should help students relate to the aims of the lesson.

Student Activities Outside of Class

Towards the end of the evaluation session the teacher should review with the class through a discussion the idea that art is a very personal mode of expression based on taste--on likes and dislikes. It should be stressed that art is not merely a copy of what is around us but that it is an interpretation of the world (real or imaginary) as an artist sees it--in his own individualized way.

For next week, instead of doing art work the students will be asked to develop their understanding of art by studying and discussing the work of other artists with their friends and/or members of their family. This may be done by making group visits to see original works of art at the Chambers Art Gallery, at the HUB Art Gallery, or at the Millbrook Art Gallery in Mill Hall.* Books and magazines which contain art reproductions should also be consulted.

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*Local resources of the community.

Each student should then select a painting, after having discussed it with a friend or member of his family, he should write a 300 word personal statement on it. In doing so he should analyze it closely to determine the specific features which influence his choice. Consideration should be given to the following qualities of the painting: (1) aesthetic, (2) imaginative, and (3) subject matter.

Each student should bring to class next week a reproduction of the painting he has selected (if at all possible) and his statement on it.

Teacher Activities Outside of Class in Preparation for Lesson

The teacher should become thoroughly familiar with the slides which will be presented to the class in order to be able to lead an exciting class discussion.

After carefully studying the outline of this activity the teacher should follow a work period similar to that outlined for the students. Since no professional model will be available figure drawings of the "self" should be made.

ACTIVITY IV

Today's activity is the beginning of a series of experiences based on painting. A variety of approaches to the painter's problems will be considered in order to give the students an aesthetic foundation for painting. The knowledges, skills and learning developed through drawing should be brought to bear on the solution of painting problems.

Topic

Expressing the Mood or Feeling of a Fantastic Dream

Materials

1. Tempera paints: white, black, red, yellow, green and blue.
2. Brushes: three different sizes for each student.
3. Mixing palettes.
4. Cans for water.
5. White drawing paper, 18" x 24".
6. Slide projector and screen.
7. Record player and several records.

Aims

The main aim of today's lesson is to introduce and/or review with the class "color" as used to develop expressive qualities in a painting and thus reflect an individualistic way of working. Although most students will have had some experience with painting and looking at painting the teacher must assume that his knowledge and understanding of it is limited. He should therefore emphasize the following points toward which the students should work:

1. Developing the ability to paint freely.
2. Learning to select and use color sensitively and to make colors move over the whole paper.
3. Finding ways of emphasizing certain parts of the painting.
4. Searching for symbols through real, imaginary or abstract elements.
5. Creating a personal statement through color.
6. Using emotional power of colors to evoke mood responses in the observer.
7. Psychological association to color through mixing, combining and subtle variations.

Presentation

The activity of today is generally aimed at the giving the students the opportunity to work in color and produce a painting which reflects an individual style. In order to accomplish this the teacher should briefly present the topic of the painting activity and the overall plan. The presentation should then begin with a discussion of the statements prepared by the students' outside of class and the paintings they have selected. The teacher should also present the painting he has selected and give his views on it. Throughout the discussion relations and connections should be made with the task which the students themselves will confront or have confronted in creating a painting. This part of the presentation should take about ten minutes.

The second part of the presentation should take about ten to fifteen minutes and consists of showing to the class a series of slides entitled "Abstract Expressionists"* which has been assembled and prepared together with a commentary by the Eastern Arts Association. This series will be presented by the teacher who should become thoroughly familiar with the slides and go over the prepared commentary. He may then present the slides in any manner he likes. A class discussion should be encouraged in order to get the students to relate to the theme they are asked to interpret--namely: "Expressing the Mood or Feeling of a Fantastic Dream."

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*Borrowed from the Loan Service of the Eastern Arts Association, Kutztown, Pennsylvania.

Some general points should be made in the discussion about the work of artists and their struggle for expression. Points to be considered are:

1. An understanding and appreciation of painting and its development as demonstrated by artists of the present and past.
2. Painting throughout the ages has served as an outstanding means of expressing the artist's ideas and feelings about his inner and outer worlds.
3. The artist's use of lines, shapes, forms, textures, colors, and space relationships to express, to intensify, and to clarify his ideas and feelings.
4. The need for developing tolerance and understanding of various approaches to painting.
5. The artist's struggle for making a personal statement.

Some more specific points should be stressed which deal with the more immediate problems the students will face. These points are outlined in the "aims" of the activity and should be integrated in the discussion of the students' selection of paintings.

The students will then be asked to interpret in their own personal and individual way the theme: "Expressing the Mood or Feeling of a Fantastic Dream." The teacher should encourage personal interpretations which may be realistic, surrealistic, abstract etc.

Procedures

1. Have a twenty minute class discussion on the students' selection of paintings.
2. Introduce topic to be interpreted.
3. Select two or three records conveying different moods and feelings and play them during work period.
4. Discuss problems each student has on a person-to-person basis as the class works. Refer to the aims of the activity to reinforce learning.
5. Have an evaluation session during the last 15 minutes.

Evaluation Critique

About 15 minutes before the end of the class the teacher should guide the students in a group evaluation of their work. The discussion should bring out again the points made during the introduction.

Student Activities Outside of Class

For next Saturday each student should select either a musical composition of a poem he likes--one which evokes in him some feeling or mood--and make a black and white drawing which expresses his personal way of listening to the music or interpreting the poem. The music or poem may be interpreted in a real imaginary or abstract way through any kind of "symbolism" or "non-symbolism." Any black and white medium may be used. The teacher should remind students that they may use any of the styles or techniques they have developed through gesture or contour drawing or combinations of them.

Teacher Activities Outside of Class in Preparation for this Lesson

The teacher should follow the outline of this activity in her outside work. In summary this involves: (1) selecting a painting and writing a statement about it, (2) creating a painting on the same topic to be given to the class and (3) becoming familiar with the series of slides on "Abstract Expressionists."

ACTIVITY V

Topic

Painting Self-Portraits (including hands)

Materials

1. Use the same materials as the ones listed for Activity IV.
2. Pen and ink and pencils may also be used.
3. Mirrors.
4. Audio-Graphic Machine.
5. Slide projector and screen.

Aims

1. Portraying the character and personality of the "self."
2. Producing an expressive mood of a self-portrait through the use of a limited palette.
3. Introducing students to a range of self-portraits by artists.
4. Awareness and consideration of background and composition of portraits.

Presentation

The activity of today consists of painting a "self-portrait" which reflects the personal character of the student and his individual style of painting. Students should be encouraged to broaden their views on the meaning of a "self-portrait"--it may range from a self-concept image to a visual likeness or interpretation.

A series of slides without commentary has been prepared to introduce today's activity. The teacher should become familiar with it beforehand in order to point out and discuss with the class the various ways artists have interpreted "self-portraits." In this presentation the work of the artists should be related to the problems that will confront the students as they work on a self-portrait. The following points should be stressed:

1. Portraying character through expressive use of art elements.
2. Need to consider head, neck and hands as integral part of body.
3. Ability to convey mood by representing head and hands in a variety of ways.
4. Relating space and environment to self-portrait.
5. Becoming aware of the expressiveness of features of the face through exaggeration, distortion or omission.
6. Emphasizing color selectivity by limitation of number of colors to be used.
7. Various ways of using colors: mixing, overlapping and brush techniques.

This presentation should encourage students' as well as teacher's identification with interpretations of various styles of painting as seen in self-portraits. The class should, whenever possible, review and recall that which they have learned and experienced in previous activities.

While the class is working the teacher should give personal direction and guidance to each student on a person-to-person basis in an attempt to help him develop his own individual style of working in art. At that time the teacher should discuss the work the students did outside of class.

Procedure

1. Set up room for painting as in previous activity.
2. Set up screen and slide projector before class.
3. Describe to class the overall work for the day.
4. Introduce the activity by showing and discussing the work of other artists on "self-portraits."
5. Each student should work within the limitations of a few colors and recognize the possibilities for expression with a limited color range.
6. Have students select 3 or 4 colors and spend 5 minutes to discover the effect of color next to color, the varied effects of paint, brushes, mixing and overlapping.
7. As students work the teacher should discuss on a person-to-person basis the individual style of students in relation to his self-portrait and the work he has done outside of class. This personal evaluation should be related to previous learnings.
8. The Audio-Graphic will again be available for individual student use.

Evaluation Critique

About fifteen minutes should be taken at the end of the period for a class evaluation and permit students to relate their work to that of the class on a non-competitive basis. Work should be displayed on the bulletin board. Teacher and students should point out the individual character of each art work. Judgments of likes and dislikes and of personal taste and reactions to the paintings should be encouraged here as well as in any other discussion.

These self-portraits should be arranged in an imaginative display and left up for about a week. Names of students should be included.

Students Activities Outside of Class

For next week the students should make a portrait of some member of their family or a friend. They should remember the approach emphasized in the lesson on "self-portraits" and use a similar approach. Emphasis should be placed on varying interpretations of the "portrait" rather than a realistic rendering.

Prior to making this drawing each student should have "a warm-up" session of about fifteen minutes in order to become better acquainted with the characteristics of the person he is drawing. This "warm up" session should be followed by a forty-minute study of the person selected.

Teacher Activities Outside of Class in Preparation for Lesson

The teacher should prepare an attractive display of the work done by the students on their interpretation of dreams.

The teacher should become thoroughly familiar with the slides of self-portraits to be shown to the class.

The studio activity for the teacher is similar to that to be introduced to the class.

ACTIVITY VI

Topic

Expressing an Emotion Through the Human Figure

Materials

1. Tempera paints.
2. Mixing palettes.
3. Several size brushes for each student.
4. Water cans.
5. White drawing paper 18" x 24".
6. Audio-Graphic Machine.

Aims

1. Developing observation and retention as basic to creative power.
2. Developing power of selective seeing through constant practice.
3. Developing emotional qualities resulting from using art elements expressively.
4. Considering color quality and its relation to expression of mood.
5. Stress personal reactions as an essential to creativity.
6. Discrimination in choice of subjects.

Presentation

Today's activity will be presented through a series of slides and a commentary on the human figure and its interpretations by contemporary and past artists. Only the single figure will be considered today. The series of slides is entitled: "Expressing Emotion through the Human Figure"; it will be programmed and shown by the teacher through the Audio-Graphic Machine. This presentation should take about fifteen minutes and should be followed by a five to ten minute class discussion of various types of emotions of the human figure.

In the presentation the following points should be brought out and related to the problem of today's activity:

1. Review of previous concepts about painting.
2. Show the variety of creative approaches from the factual to the imaginative as seen by different artists.
3. Demonstrate psychological qualities in figure composition.
4. Relating the human figure to spatial environments--real, imaginary, or abstract.

5. Translating expressive pose, mood, movement, and space relationships into aesthetic terms.
6. Use of expressive qualities of art elements in interpreting personal imagery of the single human figure.
7. Creative use of symbols and associations common to personal reaction.

The points made during the presentation should be reinforced on an individual basis. Teacher should also discuss "portraits" done during the week.

Procedure

1. Prepare art materials and arrange room ahead of time.
2. Set up Audio-Graphic so that it can be seen by the whole class during presentation and set in corner of room later for individual use.
3. Show slides by using Audio-Graphic Machine and follow it by a discussion in relation to students' identification and interpretation of a human emotion--real or abstract.
4. Have students interpret in a visual form the theme of today's activity.
5. Make available slide series prepared for use in the Audio-Graphic to serve as reinforcement or further motivation for individual students during the working period.
6. Have a person-to-person talk with each student and discuss his work and the "portrait" made during the week outside of class.
7. Conclude today's activity with a discussion of the "Emotions as interpreted through the human figure."

Evaluation Critique

Evaluate paintings as a class during the last 15 minutes of the period. Teacher should encourage students to talk about the emotion they try to express and about its relationship to the painting they have made. Consideration should be given in the discussion by both the students and the teacher to the aims of the activity.

Students Activities Outside of Class

For next week students should make a memory drawing of an "Everyday Event." The drawing should be drawn in a personal style and may be based on gesture, action or contour drawing. Instead of drawing a single human figure as was done in previous activities, students should show the environment and its relation to one or more figures.

Students should choose everyday events which are of particular interest to them. Example of topics are: "In My Room", "At the Beauty Parlor", "Shopping", "At a Record Hop" etc.

The drawing should be seen and developed as a unit. It should incorporate imaginative, interpretive and expressive elements which have been stressed throughout this course.

Teacher Activities Outside of Class in Preparation for Lesson

Teacher activities outside of class are similar to those outlined in this lesson.

In addition, the teacher should make an attractive display of the "self-portraits" done during the previous lesson.

ACTIVITY VII

Topic

A Crowd--Preliminary Sketches

Materials

1. Jet black ebony pencils.
2. Graphite sticks.
3. Newsprint paper.
4. Slide projector and screen.

Aims

The activity of today will begin a three-period project. The students, up to this point in the course, have been working on the development of various aspects of the "single figure." The main purpose of this lesson is to introduce them to a "multi-figured" composition. A more elaborate painting should be developed in this project which will be introduced over a period of three weeks.

Activities VII, VIII and IX are planned to provide for a smooth transition from one week to the next. However since the students will be working on the same project the teacher should allow for a flexible division.

The following points are to be stressed during this activity in making the preliminary sketches:

1. Using sketch books for rapid visual notations.
2. Understanding how paintings are built through constant revisions.
3. Comparing an artist's preliminary sketches with his finished product.

4. Showing various approaches used to create a painting.
5. Stressing personal interpretation of subject matter.
6. Developing a composition through gesture.
7. Understanding the differences between drawing single figures and large groups of people.
8. Relating and integrating figures with environment.
9. Considering the total composition and organization of an art production.
10. Considering both aesthetic value and personal expressiveness.

Presentation

The teacher should begin the class by giving the students an overall idea of the activity in which they will be engaged during the next three weeks. This should include a brief statement about the theme ("A Crowd") and its many possibilities for interpretations.

The importance of "preliminary sketches" or "studies" should be brought out by using as a point of departure the art work done by students outside of class on "An Everyday Event." The importance of exploring a visual idea in depth should be stressed. Students and teacher should discuss ways in which sketches or ideas may be improved through a consideration of both aesthetic and expressive qualities. It should be realized that the best paintings are sometimes based on a series of drawings through visual explorations of an idea. The first sketch is usually not the best. The sketches made outside of class should be integrated with the theme: "A Crowd."

The sketches and studies based on the theme should evolve from within the student and not as a foreign superimposed idea. Since the students in the class are of different ages, environments, and stages of maturation such factors will undoubtedly affect their reactions to the topic. In any case the topic selected is broad enough to allow for many interpretations and to meet varying interests. Some may be interested in "social protests," others in "music" or "the dance," while still others will want to draw crowds of friends and family, and situations related to more direct experiences.

After this part of the presentation (which should last about ten minutes) the teacher should show to the class a series of slides on "A Crowd" (no commentary is provided). The slides have been selected to show the broad interpretation the theme has received by artists and will give students a point of departure for some idea of their own. The teacher should help students to become aware of many possibilities of grouping people--either realistically, abstractly or otherwise. Try to involve the students as much as possible in the discussion of the slides. The students will probably interpret the situations in the slides differently from what the artist supposedly meant. The point of individual interpretations should be used to advantage to bring out the fact that people interpret from their own vantage point thus not only allowing but almost expecting art to become a very personal thing. The teacher should eliminate as much as possible any inhibitions students may have regarding their own way of expressing themselves in art. This does not mean, on the other hand, that the students should not criticize and discuss each other's art work but rather that they should try to understand that each individual has his own taste--likes and dislikes.

In discussing the slides the teacher should keep in mind the aims of the activity outlined in this lesson (review section on "aim"), and also incorporate the parts of previous activities which are appropriate. The presentation of the second part of the activity should take about fifteen minutes.

As the students start to work they should be encouraged to make a series and variety of sketches on an idea which is of interest to them in an attempt to crystallize it. They may refer to their sketch pad or reinterpret something they have done previously or make new studies of it.

During the work period the teacher should have individual conferences with each student in order to help and guide him in the development of a personal and individual way of interpreting himself through art. He should refer to the work the student has made in class and outside of class. The teacher's insight and keen sensitivity is of utmost importance in the development of the student's individual way of working.

The Audio-Graphic Machine, together with a series of slides programmed for it, will again be available to help students who need further motivation and reinforcement or who would like to explore new ideas or review what they have seen previously.

Procedure

1. Discuss the sketches the students have done outside of class and relate to the topic.
2. Show and discuss slides on "A Crowd" to motivate students to develop an idea.
3. Discuss individual sketch with students as they work.
4. Have a class evaluation during the last twenty minutes of class.

Evaluation Critique

Toward the end of the class their should be an evaluation session of the sketches the students have done. The teacher should relate to the aims of the lesson. Students should be encouraged to give thought to their ideas and make any additional sketches during the week which they feel will be of help.

Students Activities Outside of Class

For next Saturday all students should visit at least two of the following places on campus where original art works may be seen: (1) HUB Gallery, (2) Chambers Building, (3) Temporary Building, and (4) Elm Cottage. The teacher should check in advance to become acquainted with the specific art work that may be seen by the students and should pass this information on to them in order to stimulate interest. He should then arrange for students to visit these places in small groups (during the week) and to encourage their discussing the work they have seen.

Each student should write a 300 word critical analysis of the art work and their trip. This may be based on one painting or on a comparison between paintings. These statements will be discussed by the class next week.

Teacher Activities Outside of Class in Preparation for Lesson

The teacher should become familiar with the places on campus where original art work may be seen such as the HUB, Chambers Gallery, Temporary Building and Elm Cottage. Specific knowledge as to the art work that may be seen at this time of the year is required; personal contact and arrangements may also be made with professors so that small groups of students may visit during the week (see previous section).

The teacher should become familiar with the slides to be presented to the class in order to be able to lead an exciting discussion.

A display should be made of the art work the students have done in relation to "Expressing Emotion Through the Human Figure." Particular attention should be paid to the aesthetic quality of the way the work is presented.

The workshop activity of the teacher is identical to that of the students and the activity outlined for them should be reviewed for further details.

ACTIVITY VIII

Topic

A Crowd--Painting Based on Sketches

Materials

1. Tempera paints.
2. Polymer medium.
3. Mixing palettes.
4. Several size brushes for each student.
5. Water cans.
6. Masonite boards, 18" x 24".

The teacher should not that, while the materials for the previous lesson consisted of tempera paint and water, this lesson introduces "polymer medium" which will be used with tempera paint on masonite board. It was felt that these new materials would be exciting and of interest to the students and give a sort of "final-project-emphasis" to the last painting of the course.

It is essential that the teacher become familiar with using the "polymer medium" before introducing it to the class.

Aim

The general aim of this lesson is to provide the students with an opportunity to incorporate the many different concepts presented in previous lessons and to begin a painting which will show some development with respect to a personal style of painting.

In essence this lesson recapitulates the previous ones and as such the aims to be presented here are a summary of the previous seven activities. Stress the following points:

1. A sketch should be used as the basis for a painting and not as a "blueprint" for one.
2. Consideration should be given to the imaginative or creative qualities of interpretation of theme.
3. Use color, line and form to express a mood or feeling in a painting.
4. Reflect a personal statement and style in a painting.
5. Consider the aesthetic as well as expressive elements of painting.

Presentation

As the students enter the classroom they should pick up the sketches that they are considering for ideas for their painting. The materials should be organized so that the students can begin immediately after the discussion.

The presentation of today's activity should consist of showing to the class the series of slides on "A Crowd" (which was already seen last week). The teacher should stress the idea that new experiences affect the way individuals see the same paintings. Students should be encouraged to relate the paintings they have seen during the week and the statements they have written about them to the work now shown in class. The task of the teacher will be to review the aims of this project and stress:

1. Different ways of presenting groups of people.
2. The use of color in the painting to capture a mood--for decorative and expressive purposes.
3. References should be made to the work of the students displayed on the bulletin board. (On "Expressing Emotion Through the Human Figure.")
4. Review again (throughout the presentation) the fact that color is not merely "pretty" but serves as an important way to give unity and interest to a painting--in other words consider the composition or arrangement.
5. Discuss the struggle of artists for personal symbolism and personal style of painting.
6. Help student to realize that the preliminary sketches are merely to give direction of thought and should not be used as a "cartoon copy" or "blueprint."
7. The sketches should be adjusted to the use of paint.

Some of the points made by Nicolaides are helpful in realizing the aims of this project:

> When a boat comes out of the fog, you see first the large simple forms. As it comes closer, you see more. Each detail grows in place and with the same relationship to all the other details that it had at first. The details do not suddenly leap out at you but appear by gradual transition. Nothing is applied. Everything grows out of the thing itself. The thing grows and the details are the crescendo of the form. You put the cart before the horse if you put them first.[1]

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[1] Nicolaides, Ibid., p. 9.

Speaking of "composition" in a painting he writes:

> It can be said that the design of a painting (that is, its composition) is the element which insures its unity, and gesture is the unifying element. Without an awareness of the gesture there can be no understanding of the design or its reason.
>
> You do not start with the rules of composition. You start with the gesture which gives the design. It is wrong to make a plan first and then fill the plan with activity. The activity should come first....[1]

The presentation should take about fifteen minutes and should be reinforced by the teacher on a person-to-person basis during the work period.

The Audio-Graphic Machine together with programmed material will again be available.

Procedure

1. Prepare materials to be used before the class starts.
2. Set up slide projector and screen.
3. Have a group discussion based on (1) sketches students have made, (2) slides on "A Crowd," and visits students have made during the week to see and discuss paintings.
4. Set up Audio-Graphic Machine in one corner of room.
5. Have evaluation at end of period.

Evaluation Critique

At the end of the period have a short evaluation with students on the progress they have made. No work will be of such poor quality that nothing good can be said of it. Positive criticism will be beneficial and should be given. This does not mean to say that something that is "messy" or "esthetically poor" should be called excellent. The student will be aware of those areas and if the ones that have been successful are pointed out he will be more eager to accept criticism and improve the other areas of the painting.

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[1] *op. cit.*, pp. 150-151.

Students Activities Outside of Class

At this stage of the course it is hoped students will have developed some idea about how artists work and interpret the world around them. For next week students should be asked to draw or sketch in a personal and individual way that which is of interest to them. The need for continuously sketching the world around them in a personal and interpretive way should be stressed again.

Teacher Activities Outside of Class in Preparation for Lesson

The workshop activities of the teacher are of the same as those outlined for the students. It should be pointed out that experimenting with the "Polymer Medium" will help the teacher in relating to problems the students may confront with this medium.

ACTIVITY IX

Topic

A Crowd-continued

Materials

Materials will be the same as for Activity VIII

Aim

This activity is a continuation of lesson 7 and 8 and therefore the points previously stressed should be re-emphasized.

Presentation

As the students arrive they should be encouraged to go right to work. There is no need for group or class presentation since it is expected that students will be interested and eager to finish their painting. For many the attitudes they have formed during the course should serve to help them evaluate their own painting and develop confidence in their reactions to it. If the teacher feels that some students need further help it should be given on an individual basis. It may also be that some students are not keenly enough aware of the total painting and place too much importance on literal accuracy. While students should be encouraged to crystallize their painting, they should not be forced to change something that they do not understand or in which they really do not believe. Criticism should be given on an individual basis.

Procedure

1. Students should get to work on their paintings as they arrive.
2. Teacher should have individual conferences with students about their art work as the need arises.
3. A final class evaluation of their art work should be held at the end of the period.

Evaluation Critique

As the students finish their painting they should join in an evaluation with the teacher. It is not necessary for all students to finish painting at the same time. Evaluation of their painting could start as a small group and gradually grow into a class evaluation.

Since this will be the last official lesson the teacher may summarize the work done during the course in any way she likes. It is critical and essential that the students be reminded and urged they cannot be absent from class next Saturday (December 5th) as this will be the culmination of the experiment in which they were engaged this term.

Teacher Activities Outside of Class in Preparation for Lesson

The teacher should complete his painting and then become familiar with the problems each student faces in his painting in order to be able to give them individual criticism.

SUPPLEMENTARY BOOKS FOR PRESCRIBED COURSE OF STUDY

French Drawing of the 20th Century
The Vanguard Press
New York

French Drawing of the 19th Century
The Vanguard Press
New York

The Diary and Letters of Kaethe Kollwitz
Henry Regnery Company
New York, London

Modern Art a pictorial anthology
The Macmillan Company
New York

Rembrandt As a Draughtsman
Phaidon Publishers Inc.
Garden City, New York

Going for a walk with a line
a step into the world of modern art
Doubleday & Company, Inc.
New York

Drawing the Line
James A. Ernst
Reinhold Publishing
New York

Form, Space, and Vision
Graham Collier
Prentice-Hall, Inc.
Englewood Cliffs, N. J.

Ben Shahn
His Graphic Art
George Braziller, Inc.
New York

Art Since 1945
Harry N. Abrams, Inc.
New York

Augustus John, Drawings
Faber & Faber Limited
24 Russell Square
London

Painting in the Twentieth Century
Frederick A. Praeger, Publishers
New York

Daumier Drawings
Thomas Yoseloff
New York, London

Cezanne Drawings
Thomas Yoseloff
New York, London

Epstein Drawings
World Publishing
Cleveland and New York

APPENDIX C

STATISTICAL INFORMATION USED IN STUDY

STATISTICAL TECHNIQUE USED IN EVALUATING THE RELIABILITY OF THE JUDGES: SAMPLE COMPUTATION FOR ORIGINAL-AESTHETIC JUDGMENTS OF FIGURE PERFORMANCE TESTS

The reliability of the judges for the Figure performance tests based on Original-Aesthetic Quality is computed here in detail. Table 29 shows the analysis of variance produced and the substitution of the terms in the formula used to measure the reliability of the judged criteria.

Where:

Product variation (S_a^2) = 7.5013

Judge variation (S_b^2) = 11.4631

Variation due to chance (S_e^2) = 0.8341

Number of products (r) = 156

Number of judges (k) = 4

Reliability of scores based on one judge:

$$\frac{r\,(S_a^2 - S_e^2)}{r\,(S_a^2 - S_e^2) + k\,(S_b^2) + (r-1)\,S_e^2}$$

$$= \frac{156\,(7.5013 - 0.8341)}{156\,(7.5013 - 0.8341) + 4\,(11.4631) + (155)\,0.8341}$$

$$= .8559$$

Reliability for mean score based on k judges:

$$\frac{r\,(S_a^2 - S_e^2)}{r\,(S_a^2 - S_e^2) + S_b^2 + (r-1)\,S_e^2}$$

$$= \frac{156\,(7.5013 - 0.8341)}{156\,(7.5013 - 0.8341) + 11.4631 + (155)\,0.8341}$$

$$= .8808$$

TABLE 29

ANALYSIS OF VARIANCE FOR JUDGE RELIABILITY BASED ON ORIGINAL-AESTHETIC QUALITY OF FIGURE DRAWINGS

Source	Degrees of Freedom	Sum Squares	Mean Squares
A	155	1162.7100	7.5013
B	3	34.3894	11.4631
Error	465	387.8606	0.8341
Total	623	1584.9600	624.0000